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Chemical and Nutritional Composition of Finfishes, Whales, Crustaceans, Mollusks, and Their Products

Virginia D. Sidwell

January 1981

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Marine Fisheries Service

NOAA Technical Memorandum NMFS

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Chemical and Nutritional Composition of Finfishes, Whales, Crustaceans, Mollusks, and Their Products

VIRGINIA D. SIDWELL¹

ABSTRACT

This report summarizes data from 1,204 publications referring to the composition of finfishes, whales, crustaceans, and mollusks and their products. Also it includes some data that were generated at the National Marine Fisheries Service College Park/Charleston Laboratory which were not previously published. It tends to be worldwide in scope since it reports work done by the scientists in foreign countries, as well as in the United States. The Systematic Index lists in alphabetical order the biological names of approximately 1,500 finfishes, whales, and shellfishes on which there are some composition data. This summary includes data on proximate composition, selected fatty acids, cholesterol, macroelements, microelements, and vitamin content of seafoods and their products.

INTRODUCTION

Sidwell et al. (1974) described the data bank on the chemical and nutritional composition of seafoods, which was established at the Southeast Fisheries Center's College Park/Charleston Laboratory of the National Marine Fisheries Service, NOAA. In that publication the investigators outlined the system employed for the management and retrieval of the data, as well as a summary of the data on protein, fat, moisture, ash, carbohydrate, energy (calories), and cholesterol. Three interim reports were published by Sidwell et al. (1977, 1978a, b), which summarized the data on the macroelement, microelement, and vitamin content of the raw (fresh or frozen) edible portion of seafoods.

The primary objectives of this project are: 1) to develop a comprehensive, systematic data retrieval system containing available information on the chemical and nutritional composition of fish and fishery products; 2) to publish as completely as possible information on the nutrients found in fishery products; and 3) to point out areas in chemical composition of finfishes, whales, and shellfishes, needing further investigations.

DISCUSSION

This paper covers the data recorded in 1,204 scientific publications and includes some data that were generated at the College Park Laboratory and not previously published. The paper also reviews work done by scientists in the United States and in foreign countries; therefore, it is worldwide in scope. The Systematic Index

lists, alphabetically, the scientific names of approximately 1,500 species of finfish and shellfish for which there are some composition data.

Each investigator reported an average figure obtained either from several determinations on a composite sample of fish or fishery products or from a single determination on each of a number of fish. In the latter instance, the investigator reported the average and the range of the results obtained from the analyses. Both types of averages were used in this paper to calculate the overall average and range. The range of values for each constituent in the composition of a species of finfish or shellfish is sometimes quite large, as seen in Tables 1 through 24. A portion of this variation is undoubtedly due to seasonal and biological differences: size of animal, age, sex, degree of maturity, and environment. Also, a part of the variability may be associated with the differences in analytical methods applied by the various investigators to determine the amount of the component in fish. Many species of finfish and shellfish listed in Tables 1 through 24 have only one or two values associated with a specific constituent. In such cases, the limited number of values will give only an estimate of the amount of the component in seafoods; more data are needed to obtain a value that possesses any degree of reliability.

In each table, the finfishes, crustaceans, and mollusks are listed alphabetically by common name along with the scientific name. Sometimes the original data were identified by common and scientific family names and pooled under the family name. When the aquatic animal was listed by its common name only, the category was described as "unspecified." Although the common name of many species of finfishes, crustaceans, and mollusks varies with localities, the tables could not contain all the common names associated with a species; therefore, only the most commonly used names are listed in the General Index.

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The scientific names are listed alphabetically in the Systematic Index. The following references were used to identify the scientific names: Herre (1953), Smith (1961), Organisation For Economic Co-operation and Development (1968), Bailey et al. (1970), Love (1970), Abbott (1974), and Wheeler (1975).

With each set of data there is a brief description of the sample used in the analysis, e.g., muscle, raw; whole, raw; cooked; etc.

The data presented in the various tables were taken from the scientific papers listed in the bibliography.

Tables 1, 2, and 3 record the proximate composition of seafoods and their products. The variability in fat and moisture content, especially in raw seafood, is due mainly to natural seasonal variation, age, size, area of catch, and type of aquatic animal. The factors that influence the fat and moisture content do not cause much variation in protein and ash content, especially in the edible portion.

The carbohydrate content in the seafood was calculated by difference, i.e., the sum of the percentage of protein, fat, ash, and moisture subtracted from 100% equals percent carbohydrate. The carbohydrate content in fish flesh is known to be low.

The variability in the fat content is reflected in the energy values (calories) listed in the aforementioned tables. The values were calculated by the following formula: Estimated energy value = (protein $\times$ 4) + (fat $\times$ 9) + (carbohydrate $\times$ 4).

Ash content of the flesh of finfishes and crustaceans is about $1.0\% \pm 0.5\%$. Some of the variability may be associated with the bones or viscera that were not totally removed during the filleting or cleaning process. The ash values will be 2 or 3 times greater when the whole fish is used in the analyses. Additions of salt and removal of water during processing further increase the ash content. Oftentimes mollusks, e.g., oysters or mussels, are eaten whole, so the corresponding ash values will be at the high end of the range.

With few exceptions, the protein content of the raw flesh of finfish is about $20 \pm 2\%$. It will be lower if the whole fish is used in the analysis due to higher fat and ash content. In some instances, for a few species of mollusks, like oysters or mussels, the protein will be notably lower than that in finfishes. The crustaceans, especially shrimp, are slightly higher than finfishes.

Amino acid profiles of some finfishes and shellfishes are tabulated in Tables 4, 5, and 6. They are reported as percent of the total protein ($6.25 \times N$).

Selected fatty acids of the total fat of finfish and shellfish muscles are listed in Tables 7, 8, and 9. In this category the data on the composition of total fat are limited.

Cholesterol content, total and free, is listed in Tables 10, 11, and 12. In this paper the data are limited in scope. The following generalization can be made: Finfish muscle is low in total cholesterol, especially in the so-called "low-fat fish." In mollusks and crustaceans, cholesterol tends to be 2 to 3 times greater than found in finfishes. In general, these values should be considered as estimates

since the variability associated with age, size, sex, season, and spawning is not identified.

Listed in Tables 13, 14, and 15 are the values for some of the nutritionally important macroelements—sodium, potassium, calcium, phosphorus, and magnesium. In general, raw fish flesh, especially that of freshwater finfish, is relatively low in sodium content. Shellfish tend to contain higher levels of sodium. Seafood is an excellent source of potassium. Fish can be a good source of calcium if, like sardines, they are consumed with bones. Phosphorus in the bones and/or flesh contributes significantly to a person's daily needs.

Magnesium is a nutritionally important element. The amount found in aquatic animals may be influenced largely by the amount present in the environment. The physiological need of the element by the aquatic animal has not been established. In the higher forms of terrestrial animals this element functions in the enzyme system active in carbohydrate metabolism. Most of the limited number of values fall between 20 and 40 mg/100 g of raw flesh.

Fish flesh contains many of the elements found in seawater. Some of these are nutritionally important, both to the animal and to the person who consumes the flesh of the animal; others may be a detriment. Listed in Tables 16 to 22 are 22 elements that are found in varying amounts in seafood flesh.

The literature we reviewed contains minimal information on: 1) the physiological need for microelements in fish muscle; 2) the physiological interrelationships between the elements; and 3) how much of an element can be expected to be naturally present in the fish muscle.

Excellent and reliable data on the microelement content of the flesh of commercially and recreationally important species harvested from the coastal waters of the United States, Hawaii, and Alaska can be found in the paper by Hall et al. (1978). These data (not included in this paper) were generated over a period of 5 yr at the College Park Laboratory. Hall et al. (1978) does not fill the gaps that are evident in this paper.

Listed in Tables 22, 23, and 24 are the following vitamins: Vitamin A, thiamine, riboflavin, niacin, ascorbic acid, folic acid, and vitamin B₁₂. More extensive coverage of the vitamin content of seafoods is in the fourth interim report by Sidwell et al. (1978b). Even from the limited and scattered data, we can assume that seafood is a good source of the vitamins: niacin, riboflavin, and vitamin B₁₂.

In conclusion, as to the relevancy of the data summarized in this publication, it is important for the reader to keep in mind the important biological, physiological, and geographical differences that are present for the various species of aquatic animals we have included. The animal under investigation should be clearly identified by the systematic name, place and time of catch, and physiological status (e.g., size, sex, state of spawning, length of time out of the water, etc.). Also, there should be a normal range of values corresponding to at least 1 yr of collections for at least two sizes and/or ages. The species of fish should be sampled at least once a month.

Such background information is necessary to obtain the most useful meaning out of the present data base. Clearly, such information is critical if we are to be able to deduce why differences occur in the composition of a single species of fish that is procured from different places and analyzed by different investigators.

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Table 1.--Proximate composition of finfishes, whales, and products.

Common and Scientific Name	Description	Moisture %	Protein %	Fat %	Ash %	Carbo- hydrates ^{1/} %	Calories ^{2/} Per 100 grams
Ainame <u>Hexagrammos otakii</u>	Muscle Raw	79.8	17.5	1.1	1.4	0.2	86
Alewife <u>Alosa pseudoharengus</u>	Muscle Raw	73.9 ^{3/} 65.9-79.9 ^{4/} 8 ^{5/}	17.3 ^{3/} 11.7-20.4 ^{4/} 9 ^{5/}	6.8 ^{2/} 2.9-15.2 ^{4/} 9 ^{5/}	1.6 ^{3/} 1.2-2.7 ^{4/} 8 ^{5/}	0.4	132
	Whole Raw	71.6 64.4-79.0 14	14.0 11.3-16.1 14	11.6 6.1-18.8 14	2.8 1.7-3.9 14	0	160
	Canned Fishmeal	73.0 3.8	16.0 65.7	7.9 12.9	2.4 14.6	0.7 3.0	138 391
	Offal Raw	70.2	15.6	10.1	3.1	1.0	157
	Roe Raw	73.0	16.0	7.9	3.4	0	135
Alfoncino <u>Beryx splendens</u>	Muscle Raw	75.9	18.5	4.5	1.0	0	115
Amberjack, Greater <u>Seriola dumerili</u>	Muscle Raw	73.9 73.3-74.4 2	18.9 15.4-20.8 3	8.7 0.8-21.2 3	1.1 1.0-1.1 2	0	154
	Dried	14.1 12.2-15.0 3	54.6 54.0-54.9 3	4.6 4.5-4.6 3	28.4	0	260
Amberjack, King <u>Seriola dorsalis</u>	Muscle Raw	75.0 73.4-77.5 4	21.1 19.1-22.5 4	2.8 1.0-4.0 4	1.2 1.1-1.3 3	0	100
Amberjack, Philippine <u>Hynn timeromsa</u>	Muscle Raw	75.6 74.4-76.3 3	21.3 21.0-21.6 3	1.0 .4-1.7 3	1.4 1.4-1.5 3	0.7	97
Amberjack, Yellowtail <u>Seriola quinqueradiata</u>	Muscle Raw	71.7 67.6-74.8 17	21.1 16.9-22.6 15	6.1 2.0-13.9 17	1.2 1.0-1.6 12	0	138
	Canned In Oil, Smoked	42.9	27.2	22.4	7.5	0	310
	Roe Raw	73.2 65.8-80.5 2	16.8 10.4-23.2 2	3.8 0.7-6.9 2	1.5 1.4-1.5 2	4.7	120
Anchoveta <u>Engraulis mysticetus</u>	Whole Fishmeal	6.4	64.5	11.4	16.9	0.8	363
Anchoveta <u>Engraulis ringens</u>	Whole Fishmeal	7.6 7.4-7.7 2	66.0 64.9-67.0 2	8.2 7.8-8.6 2	13.7 12.9-14.5 2	4.5	356
Anchovy <u>Engraulis mystax</u>	Muscle Raw	69.3	19.3	9.6	1.6	0	164

Table 1.--Proximate composition of finfishes, whales, and products.

Common and Scientific Name	Description	Moisture	Protein	Fat	Ash	Carbo- hydrates ^{1/}	Calories ^{2/}
		%	%	%	%	%	Per 100 grams
Anchovy, Ca'Moi <u>Coilia lindmani</u>	Muscle Raw	77.3	20.6	0.2	1.0	0.9	88
Anchovy, European <u>Engraulis encrasicolus</u>	Muscle Raw	75.3 72.4-79.1 9	20.1 15.3-23.5 8	2.3 1.7-3.6 8	1.9 1.1-2.1 7	0.4	103
	Canned In Olive Oil	42.7	19.9	26.2	11.2	0	316
	Whole Raw	71.8 68.1-75.5 2	18.0 15.3-21.0 3	2.7 1.0-4.4 2	6.4 2.9-9.9 2	2.1	105
	Dried	22.7	50.4	4.9	23.2	0	259
	Dried & Smoked	20.2	55.8	7.8	16.2	0	293
	Salted	60.0	20.0	8.5	(11.5) ^{6/}	0	159
	Salted & Dried	11.5	61.9	4.4	22.2	0	287
	Salted & Fermented	48.0	28.8	1.3	(31.9)	0	127
Anchovy, Longjaw, Bilis <u>Stolephorus heterolobus</u>	Whole Raw	84.1	13.2	1.0	1.5	0	62
	Cooked						
	Boiled	68.1	22.0	2.0	8.2	0	106
	Dried	30.7	45.8	4.0	17.2	2.3	228
Anchovy, Longjaw, Delis <u>Stolephorus commersonii</u>	Muscle Raw	79.5	18.2	0.7	1.2	0.4	81
	Whole Raw	76.3 73.7-81.0 5	18.3 15.7-20.7 5	1.2 0.8-1.4 5	2.9 2.4-3.6 5	1.3	89
	Dried	19.3 16.7-22.0 2	59.2 49.8-68.7 2	3.6 3.0-4.2 2	16.0 13.3-18.7 2	1.9	277
	Salted & Dried	14.8 9.1-18.7 3	70.2 62.0-83.9 3	2.1 1.5-2.6 2	13.5 13.3-13.7 2	0	300
	Salted & Fermented	64.3	14.3	1.0	20.6	0	66
	Fishmeal (extracted)	4.4 1.9-9.3 4	78.9 76.7-80.3 4	0.0 0.0-0.0 4	14.2 13.2-15.3 4	2.5	326
Anchovy, Mandalai <u>Coilia dussumieri</u>	Muscle Raw	77.1	15.0 14.6-15.4 2	0.6	1.5	6.2	90
	Salted & Dried	31.1	52.6	5.4	(10.9)	0	259
Anchovy, Northern <u>Engraulis mordax</u>	Whole Raw	71.2 59.7-80.7 17	13.8 11.0-16.5 17	10.7 3.5-24.6 17	3.8 1.9-6.2 17	0	152
	Deboned Raw	72.4 59.2-82.8 16	12.9 10.5-14.4 16	12.7 3.9-26.7 16	2.6 1.5-3.4 16	0	166
	FPC ^{2/}	2.8 2.0-3.9 16	90.7 79.5-98.0 16	0.5 0.1-1.2 16	9.3 4.8-19.1 16	0	367

Table 1.--Proximate composition of finfishes, whales, and products.

Common and Scientific Name	Description	Moisture	Protein	Fat	Ash	Carbo- hydrates ^{1/}	Calories ^{2/}
		%	%	%	%	%	Per 100 grams
Anchovy, Pacific <u>Engraulis japonicus</u>	Muscle						
	Raw						
	Dark meat	74.6	19.9	3.8	1.5	0.2	115
	Light meat	77.8	20.8	0.5	1.6	0	88
	Whole						
	Raw	70.3	16.6	4.8	5.2	3.1	122
		65.2-75.4 2	15.2-18.0 2	1.2-8.5 2	4.8-5.7 2		
Anchovy, Striped <u>Anchoa hepsetus</u>	Whole						
	Raw	76.6	17.3	2.8	3.3	0	94
		74.2-78.1 24	16.2-18.9 24	1.6-4.6 23	2.5-4.1 23		
Anchovy, Whitebait <u>Stolephorus tri</u>	Whole						
	Raw	78.6	15.0	1.6	2.7	2.1	83
		78.0-79.1 2	14.5-15.5 2	1.4-1.8 2	2.5-2.9 2		
Anchovy Engraulidae	Dried	26.0	45.9	3.0	(15.2)	9.9	250
	Muscle						
	Raw	75.2	19.6	3.1	2.2	0	106
		73.1-76.9 4	16.7-21.8 4	0.4-6.0 4	1.7-2.6 3		
	Dried	13.4	68.2	4.0	4.4	10.0	349
	Salted & Dried	20.7	67.5	3.3	8.4	0	400
	Whole						
	Raw	76.5	17.1	2.9	3.5	0	95
		75.9-77.1 2	16.4-17.7 2	2.2-3.5 2	3.5-3.6 2		
	Dried	27.6	54.9	3.4	14.2	0	251
		16.0-44.8 5	37.8-69.0 5	1.6-5.5 5	11.3-15.8 5		
	Paste	55.7	20.6	12.1	7.1	4.5	210
	Salted	65.7	9.5	2.1	20.6	2.1	65
		62.8-68.7 2	9.5-9.6 2	1.9-2.2 2	16.7-24.5 2		
	Salted & Dried	27.8	39.6	4.6	28.9	0	200
		24.8-30.9 2	36.1-43.1 2	2.3-6.8 2	27.0-30.8 2		
	Fishmeal	6.8	64.7	7.8	17.1	3.6	343
		3.1-8.2 6	50.3-71.4 7	3.3-13.4 8	14.5-26.1 7		
	Angelfish, Queen <u>Holacanthus ciliaris</u>						
	Raw	79.7	20.3	0.2	1.1	0	83
Angelfish, Sea Bat <u>Platax pinnatus</u>	Muscle						
	Raw	79.9	18.6	0.5	1.0	0	79
Argentine, Atlantic <u>Argentina silus</u>	Whole						
	Fishmeal	6.4	76.1	8.6	9.2	0	382
Bamboofish <u>Sarpa salpa</u>	Muscle						
	Raw	74.5	19.7	2.8	2.0	1.0	108
		72.1-76.1 6	19.1-21.3 7	0.8-4.6 7	1.0-4.5 7		
Barbel, Southern <u>Barbus meridionalis</u>	Muscle						
	Raw	81.2	16.7	1.4	1.1	0	79
Barracouta <u>Thyrsites atun</u>	Muscle						
	Raw	71.9	21.9	5.0	1.7	0	132
		65.6-85.0 9	21.0-22.4 8	2.5-6.7 9	1.3-1.9 8		

Table 1.--Proximate composition of finfishes, whales, and products.

Common and Scientific Name	Description	Moisture %	Protein %	Fat %	Ash %	Carbo- hydrates ^{1/} %	Calories ^{2/} Per 100 grams
	Dressed						
	Raw	68.5 67.8-70.0 3	20.0 19.6-20.4 3	6.2 4.3-7.4 3	3.9 3.6-4.1 3	1.4	110
	Offal						
	Raw	65.6 65.0-66.3 3	16.5 16.3-16.9 3	7.1 6.2-8.0 3	8.0 7.5-8.8 3	2.8	106
Barracuda <u>Sphyraena japonica</u>	Muscle						
	Raw	77.9	18.6	3.5	1.5	0	106
Barracuda <u>Sphyraena obtusata</u>	Muscle						
	Raw	77.5	19.0	1.1	1.1	1.3	91
	Dressed						
	Raw	(73.5)	19.9	5.5	1.8	0	129
Barracuda <u>Sphyraena vulgaris</u>	Muscle						
	Raw	75.8 74.8-76.8 2	21.0	1.4 0.6-2.1 2	1.6 1.4-1.7 2	0	97
Barracuda, Great <u>Sphyraena barracuda</u>	Muscle						
	Raw	77.9	20.0	1.2	1.3	0	91
Barracuda, Guaguanche <u>Sphyraena guachancho</u>	Muscle						
	Raw	78.0	20.5	0.5	1.0	0	87
	Whole						
	Smoked	22.1	58.4	3.8	13.7	2.0	276
Barracuda, Pacific <u>Sphyraena argentea</u>	Muscle						
	Raw	74.5 72.3-76.6 2	21.2 20.5-21.8 2	3.1 1.5-4.6 2	1.4	0	97
Barracuda, Red <u>Sphyraena pinguis</u>	Roe						
	Raw	66.8	21.9	8.7	1.6	1.0	170
Barracuda, Striped Torcillo <u>Sphyraena jello</u>	Muscle						
	Raw	77.2 75.6-79.4 5	19.3 18.4-20.6 5	0.9 0.2-1.4 5	1.6 1.2-1.8 5	1.0	89
	Dressed						
	Raw	75.5	20.1	1.4	1.8	1.2	98
Barracuda <u>Sphyraenidae</u>	Muscle						
	Raw	76.3 67.9-78.6 7	19.6 18.6-21.9 7	2.0 0.3-5.0 7	1.9 1.2-4.9 7	0	96
	Smoked	24.1	58.4	3.8	13.7	0	268
Bass, Sea <u>Diplectrum radiale</u>	Muscle						
	Raw	80.8	18.0	0.3	1.1	0	75
Bass, Sea <u>Paralabrax humeralis</u>	Muscle						
	Raw	78.8 78.3-79.2 2	18.0 16.8-19.2 2	1.5 1.4-1.6 2	1.2 1.1-1.3 2	0.5	88
	Salted	46.6	34.9	2.8	14.9	0	165

Table 1.--Proximate composition of finfishes, whales, and products.

Common and Scientific Name	Description	Moisture	Protein	Fat	Ash	Carbo- hydrates ^{1/}	Calories ^{2/}
		%	%	%	%	%	Per 100 grams
Bass, Sea, Bank <u>Centropristes ocyurus</u>	Whole Raw	76.3	17.3	1.5	5.8	0	72
Bass, Sea, Black <u>Centropristes striatus</u>	Muscle Raw	78.5 77.3-79.5 6	18.4 18.0-18.9 6	1.7 0.8-3.0 7	1.1 0.9-1.2 6	0	89
	Cooked Baked	52.9	16.2	15.8	3.7	11.4	253
	Whole Raw	74.3	14.3	6.1	3.2	2.1	121
	Offal Raw	69.8 66.3-73.2 4	16.4 15.6-17.4 4	7.2 5.3-9.5 4	6.3 2.9-8.4 4	0	130
	Roe Raw	76.5	16.9	3.8	1.6	1.2	107
Bass, Sea, Cabrilla <u>Paracentropistes cabrilla</u>	Muscle Raw	77.0 76.3-77.7 2	20.0 18.8-21.2 2	1.3 0.8-1.7 2	1.3 1.2-1.4 2	0	92
Bass, Sea, Cherlo <u>Acanthistius pictus</u>	Muscle Raw	76.2	18.8	3.1	1.5	0	93
Bass, Sea, Japanese <u>Lateolabrax japonicus</u>	Muscle Raw	75.9 74.0-77.4 4	18.4 18.0-19.0 3	3.2 0.8-6.6 5	1.2 1.1-1.2 4	1.3	108
Bass, Sea, Kelp <u>Paralabrax clathratus</u>	Muscle Raw	79.6	20.1	0.1	1.1	0	81
Bass, Sea Serranidae	Muscle Raw	78.3 74.5-80.8 9	19.1 15.0-21.0 8	1.6 0.4-3.7 9	1.3 1.2-1.5 7	0	90
	Cooked Baked						
	With Shrimp	67.4	19.6	5.6	1.8	5.6	151
	Oven-fried	60.8	21.5	8.5	2.5	6.7	189
	Steamed	73.3	19.5	5.1	(2.1)	0	124
	Roe Raw	73.9	15.7	7.3	1.5	1.6	135
Bass, Temperate, Rabaliza <u>Morone labrax</u>	Muscle Raw	77.9 74.8-80.4 11	18.5 16.1-20.0 11	1.6 1.0-4.4 11	1.3 1.0-2.0 9	0.7	91
	Dark meat	70.1 60.6-78.2 4	13.4 12.6-14.3 4	6.8 4.7-24.0 4	1.1 1.1-1.2 4	8.6	163
	Whole Raw	71.9 70.2-73.6 2	15.5 15.2-15.8 2	4.6 3.3-5.9 2	4.7 4.6-4.8 2	3.3	117
Bass, Temperate, Striped <u>Morone punctata</u>	Muscle Raw	78.4 77.7-78.8 3	18.8 18.4-19.2 2	1.4 1.3-1.4 2	1.2 1.1-1.3 2	0	88

Table 1.--Proximate composition of finfishes, whales, and products.

Common and Scientific Name	Description	Moisture	Protein	Fat	Ash	Carbo- hydrates ^{1/}	Calories ^{2/}
		%	%	%	%	%	Per 100 grams
Bass, Temperate, Striped <u>Morone lineatus</u>	Muscle Raw	77.2	19.6	3.3	1.3	0	108
Bass, Temperate, Striped <u>Morone saxatilis</u>	Muscle Raw	79.2 77.5-80.6 4	17.3 16.4-18.8 3	2.3 1.5-2.9 3	1.0 0.9-1.1 3	0	90
	Offal Raw	70.0 66.0-74.0 2	16.1 15.7-16.4 2	8.3 4.4-12.1 2	4.9	0.7	142
Bass, Temperate, White <u>Morone chrysops</u>	Muscle Raw	77.0 74.7-78.8 4	18.2 17.7-18.9 4	3.1 2.3-4.5 4	1.5 1.0-2.9 4	0.2	92
	Whole Raw	70.8 69.8-71.8 2	15.5 15.0-15.9 2	8.4 8.3-8.5 2	4.6 4.3-4.8 2	0.2	92
Bass, Temperate Percichthyidae	Muscle Raw	76.5 75.7-77.7 4	18.7 17.8-19.3 4	3.5 2.1-4.5 5	1.1 1.1-1.2 4	0	106
Batfish, Silvery <u>Psettes sebae</u>	Muscle Raw	76.0	20.7	2.0	1.3	0	101
Big-eye <u>Scombroproops</u>	Muscle Raw	68.9	19.5	10.0	1.6	0	168
Blacktail <u>Oblata melanura</u>	Muscle Raw	76.0 75.6-76.4 2	20.0 18.9-21.0 2	3.1 1.3-4.8 2	1.4 1.3-1.4 2	0	108
Bleak <u>Alburnus lucida</u>	Muscle Raw	72.9	15.7	8.1	3.3	0	136
Bleeker <u>Pseudorhombus neglectus</u>	Muscle Raw	80.2 80.1-80.3 3	17.4 17.4-17.4 3	0.5 0.5-0.5 3	1.6 1.6-1.6 3	0	74
Blenny <u>Enedrias nebulosus</u>	Muscle Raw	75.1	19.0	2.4	3.4	0	98
Bloater <u>Coregonus hoyi</u>	Muscle Raw	66.7 64.0-69.3 2	19.0	14.0	2.0	0	202
	Canned Cooked	69.0	16.2	5.8	1.8	7.2	146
	Grilled	55.6	22.6	17.4	(4.4)	0	247
	Paste	55.6	20.1	12.0	6.7	5.6	211
Bluefish <u>Pomatomus saltatrix</u>	Muscle Raw	75.0 72.9-77.5 7	20.6 18.6-21.6 6	3.8 1.5-7.4 7	1.5 1.1-2.4 6	0	96
	Salted & Dried	12.0	58.9	2.3	26.8	0	256

Table 1.--Proximate composition of finfishes, whales, and products.

Common and Scientific Name	Description	Moisture	Protein	Fat	Ash	Carbo- hydrates ^{1/}	Calories ^{2/}
		%	%	%	%	%	Per 100 grams
Bluefish <u>Pomatomidae</u>	Muscle Raw	76.8	19.2	3.3	1.4	0	107
		69.0-81.4 6	19.1-19.4 2	1.2-7.4 3	1.3-1.4 3		
	Cooked Baked	69.8	26.6	4.5	1.1	0	146
		68.0-72.2 3	25.9-27.2 2	4.2-4.7 2	0.8-1.4 2		
	Broiled	66.7	25.2	6.3	2.1	0	158
	Fried	60.8	22.7	9.8	2.0	4.7	200
	Steamed	73.0	19.7	4.5	1.9	1.0	125
	Unspecified ^{8/}	68.2	25.9	4.5	1.2	0	144
Bombay Duck <u>Harpodon nehereus</u>	Muscle Raw	89.6	8.8	4.0	0.7	0	71
		89.1-90.3 3	8.4-9.1 3	3.5-4.5 2			
	Dressed Dried	22.4	54.6	3.6	14.4	5.0	271
		9.7-38.5 4	52.1-57.2 2	2.2-4.1 4			
Bonito <u>Auxis bisus</u>	Muscle Raw	67.8	24.8	2.6	1.4	3.4	136
Bonito, Atlantic <u>Sarda sarda</u>	Muscle Raw	70.7	23.2	5.5	1.5	0	142
		64.5-75.1 10	18.8-29.3 9	1.5-11.5 9	1.3-2.0 9		
Bonito, Pacific <u>Sarda chiliensis</u>	Muscle Raw	68.6	22.9	6.8	1.5	0	159
		65.8-73.7 5	22.6-23.5 5	2.6-10.2 4	1.4-1.6 4		
	Salted & Dried	44.0	32.3	5.1	15.2	3.4	189
	Roe Raw	75.5	17.2	3.0	1.5	2.8	107
Bonito Scombridae	Muscle Raw	73.9	20.5	2.5	1.4	1.7	111
		68.9-78.2 7	15.4-24.7 7	0.5-4.2 6	1.3-1.8 6		
	Cooked Roasted	69.9	24.0	3.7	1.6	0.8	118
		23.9	53.4	3.0	9.6	10.1	281
	Dried	13.8-44.0 3	32.3-74.5 2	1.9-5.1 3	4.0-15.2 2		
Bowfin, Mudfish <u>Amia calva</u>	Roe Raw	78.3	17.2	3.0	1.5	0	95
	Muscle Raw	77.1	20.1	1.4	1.4	1.5	99
Bream, Bronze <u>Abramis brama</u>	Whole Raw	76.2	15.5	1.5	3.6	3.2	88
	Muscle Raw	78.7	16.2	4.1	(1.0)	0	102
		78.4-79.0 2	16.0-16.4 2	4.0-4.2 2			
	Whole Fishmeal	12.4	72.2	7.2	(8.2)	0	354
		11.8-13.1 2	67.7-76.6 2	1.9-12.5 2			

Table 1.--Proximate composition of finfishes, whales, and products.

Common and Scientific Name	Description	Moisture	Protein	Fat	Ash	Carbo- hydrates ^{1/}	Calories ^{2/}
		%	%	%	%	%	Per 100 grams
Bream, Gilthead <u>Chrysophrys aurata</u>	Muscle Raw	77.0	19.4	2.2	1.3	0	97
		74.8-78.9 5	17.3-20.3 7	0.5-3.3 6	1.1-1.5 6		
Bream, Mud <u>Acanthopagrus berda</u>	Muscle Raw	75.6	21.1	1.1	1.6	0.6	97
		73.6-76.6 6	20.5-21.8 6	0.2-1.9 6	1.3-2.5 6		
	Salted & Dried	43.1 42.8-43.8 3	34.3 34.3-34.3 3	6.2 6.2-6.2 3	15.7 15.7-15.7 3	0.7	195
Bream, Red <u>Beryx decadactylus</u>	Muscle Raw	78.5	17.9	2.2	1.2	0.2	92
Bream, Sea <u>Dentex canariensis</u>	Muscle Raw	77.9	18.7	1.2	2.1	0	86
Bream, Sea <u>Dentex maratanus</u>	Muscle Raw	78.8 77.6-80.0 2	18.7 18.6-18.7 2	2.5 2.2-2.8 2	1.4 1.3-1.5 2	0	97
Bream, Sea, Pagre <u>Pagrus pagrus</u>	Muscle Raw	76.6	20.3	1.5	1.5	0.1	95
Bream, Sea, Red <u>Chrysoshrys major</u>	Muscle Raw	77.0 70.4-80.6 6	18.8 13.6-22.7 7	2.2 0.2-4.3 6	1.3 1.2-1.5 4	0.7	98
	Roe Raw	74.6	18.0	4.8	1.4	1.2	120
Bream, Sea, Yellow <u>Talus tumifrons</u>	Muscle Raw	76.3 76.0-76.6 2	19.4	3.0	1.3	0	105
Bream, Southern <u>Stenotomus oculateus</u>	Whole Raw	73.0	18.7	4.2	4.3	0	113
Bream, Tooched <u>Dentex vulgaris</u>	Muscle Raw	77.1	18.8	2.7	1.4	0	105
		75.6-77.8 4	16.7-21.4 5	1.0-3.5 5	1.2-1.6 5		
Bream, White, Sargo <u>Diplodus sargus</u>	Muscle Raw	73.9 66.1-77.6 4	19.5 17.3-20.8 5	3.6 0.8-9.6 5	2.1 1.5-3.5 5	0.9	114
	Salted & Dried	12.8 11.5-13.5 3	55.6 55.6-55.6 3	3.3 3.3-3.3 3	29.7 29.6-29.8 3	0	255
Brill <u>Rhombus laevis</u>	Muscle Raw	78.3	17.7	2.0	1.6	0.4	92
		76.3-81.4 5	15.9-19.4 6	0.1-4.7 6	1.2-1.8 5		
Brill, Rough Scaled <u>Pseudorhombus oligodon</u>	Muscle Raw	76.8	19.4	2.7	1.3	1.1	106
		76.0-78.1 3	15.7-20.5 3	0.2-6.5 3	1.0-1.6 3		
Bumper, Atlantic <u>Chloroscombrus chrysurus</u>	Whole Raw	72.8 70.0-79.1 3	18.4 18.0-19.1 3	5.1 0.4-11.0 2	4.1 3.9-4.2 4	0	120

Table 1.--Proximate composition of finfishes, whales, and products.

Common and Scientific Name	Description	Moisture	Protein	Fat	Ash	Carbo- hydrates ^{1/}	Calories ^{2/}
		%	%	%	%	%	Per 100 grams
Burbot <u>Lota lota</u>	Muscle Raw	81.1	17.6	0.8	1.3	0	78
		80.1-82.6 5	16.3-19.2 4	0.4-1.2 5	1.0-1.9 4		
	Whole Raw Fishmeal	78.1	15.2	3.7	2.8	0.2	95
		10.5	66.2	6.6	16.4	0.3	324
Butterfish <u>Peprilus tricanthus</u>	Muscle Raw	71.9	17.3	11.2	1.4	0	114
		64.0-80.0 8	16.3-18.2 8	5.1-17.3 7	1.0-2.2 6		
	Cooked Fishloaf	73.1	19.8	0.5	0.5	6.1	109
	Whole Raw	76.7	16.5	4.2	2.7	0	104
		68.2-79.3 24	14.4-18.3 25	1.3-13.8 24	1.9-3.5 24		
Butterfish, Black <u>Stromateus niger</u>	Muscle Raw	76.6	17.9	2.2	1.3	2.0	99
		70.6-80.6 6	15.3-20.3 7	1.0-4.0 6	.4-2.2 6		
	Muscle Raw	74.8	17.9	3.5	1.5	2.3	112
		71.0-78.4 5	15.1-22.7 7	1.3-4.9 3			
Butterfish Stromateidae	Muscle Raw	75.9	18.7	5.7	1.4	0	126
		70.0-79.1 3	18.0-19.1 3	0.4-11.0 2	1.2-1.6 3		
Butterflyfish, Ca Chix <u>Coradion altivelis</u>	Muscle Raw	79.7	18.7	0.4	0.9	0.3	78
Butterflyfish Chaetodontidae	Muscle Raw	77.6	20.1	0.3	1.2	0.8	86
		75.1-78.9 4	19.7-21.0 4	0.6-2.9 4	1.1-1.3 4		
Caesio, Golden <u>Caesio chrysozonus</u>	Muscle Raw	78.9	19.4	0.7	1.3	0	84
		78.7-79.4 5	19.2-19.5 5	0.6-1.0 5	1.2-1.4 5		
	Dried	38.4	44.6	4.9	8.3	3.8	222
Caesio, Golden <u>Caesio cuning</u>	Muscle Raw	77.9	20.0	0.7	1.4	0	86
		77.5-78.1 5	18.9-20.6 4	0.3-0.8 5	1.3-1.6 5		
Caesio, Moon <u>Caesio lunaris</u>	Muscle Raw	77.7	19.4	0.6	1.3	1.0	78
Caesio, Sulid <u>Caesio caerulaureus</u>	Muscle Raw	80.0	17.4	0.9	1.5	0.2	74
Capelin <u>Mallotus villosus</u>	Muscle Raw	81.8	15.0	3.1 2.6-3.4 3	(0.6)	0	88

Table 1.--Proximate composition of finfishes, whales, and products.

Common and Scientific Name	Description	Moisture	Protein	Fat	Ash	Carbo- hydrates ^{1/}	Calories ^{2/}
		%	%	%	%	%	Per 100 grams
	Whole						
	Raw	80.0	14.1	4.1	2.1	0	93
		75.6-82.3	13.0-15.3	2.1-10.3	.1-3.2		
		28	25	29	21		
	Fishmeal	13.6	68.4	8.8	8.3	.8	353
Carp	Muscle						
<u>Chela bacila</u>	Raw	77.5	14.6	4.3	2.1	1.5	103
Carp	Muscle						
<u>Cyprinus carpio</u>	Raw	76.2	17.4	5.9	1.1	0	125
		67.3-80.7	12.3-20.9	1.3-14.8	1.0-1.5		
		33	31	30	25		
	Cooked						
	Boiled	75.2	16.2	6.5	1.1	1.0	128
	Whole						
	Raw	71.6	14.0	9.6	3.2	1.6	149
	Offal						
	Raw	64.0	16.1	14.3	6.7	0	193
		63.3-64.9	14.8-17.4	9.8-18.0	3.6-9.3		
		3	3	3	3		
Carp	Muscle						
<u>Leuciscus souffia</u>	Raw	78.9	19.2	1.0	1.3	0	86
Carp, Bata	Muscle						
<u>Labeo bata</u>	Raw	75.1	15.9	3.2	2.0	3.8	92
		67.3-79.9	14.1-19.4	.1-8.8	1.6-2.2		
		5	5	5	5		
Carp, Chevenne	Muscle						
<u>Leuciscus cephalus</u>	Raw	78.7	17.8	2.7	1.2	0	96
		77.9-79.1	15.6-19.0	1.3-5.4			
		3	3	3			
Carp, Crucian	Muscle						
<u>Cyprinus carassius</u>	Raw	79.2	15.8	2.4	2.6	0	95
		78.0-83.0	14.8-16.3	0.6-3.5	1.3-5.2		
		5	4	5	4		
Carp, Ghania	Muscle						
<u>Labeo gonius</u>	Raw	80.5	17.2	.3	1.7	0.3	71
		79.5-82.1	15.7-18.0	0.1-.5	1.3-2.0		
		3	3	3	3		
	Dried	20.4	63.3	2.4	12.2	1.7	282
Carp, Indian	Muscle						
<u>Barbus putitora</u>	Raw	78.0	19.4	1.2	1.3	0	88
Carp, Indian	Muscle						
<u>Barbus stigma</u>	Raw	79.2	14.2	1.3	1.1	4.2	85
Carp, Indian	Muscle						
<u>Labeo rohita</u>	Raw	78.1	17.7	2.1	1.1	1.0	74
		72.0-82.6	16.3-18.9	0.1-2.8	0.9-1.4		
		11	11	7	6		
	Whole						
	Fishmeal	6.1	74.4	3.1	10.4	6.0	349
		5.3-6.9	72.2-76.6	2.2-3.9	8.4-12.4		
		2	2	2	2		
	Roe						
	Raw	64.3	26.4	6.0	(3.3)	0	160
Carp, Indian, Puti	Muscle						
<u>Barbus punitus sophore</u>	Raw	77.9	18.0	2.8	1.4	0	97
		75.0-79.1	16.0-19.3	2.4-3.1	1.4-1.5		
		4	6	2	2		
	Dried & Smoked	30.0	40.2	8.2	9.8	11.8	282

Table 1.--Proximate composition of finfishes, whales, and products.

Common and Scientific Name	Description	Moisture	Protein	Fat	Ash	Carbo- hydrates ^{1/}	Calories ^{2/}
		%	%	%	%	%	Per 100 grams
Carp, Indian, Puti <u>Barbus sarana</u>	Muscle	79.0	16.4	0.8	1.3	2.5	83
	Raw	77.4-81.3 3	14.4-19.7 3	0.3-1.2 2	1.2-1.4 3		
	Whole						
	Dried	17.1	61.4	4.0	15.0	2.5	292
Carp, Katla <u>Catla catla</u>	Muscle	78.8	16.8	1.6	1.3	1.5	88
	Raw	73.7-82.0 7	14.1-19.5 5	0.8-1.6 3	1.1-1.5 4		
	Dried	19.7	66.3	4.3	7.1	2.6	314
	Whole						
	Raw	70.0	19.2	2.5	(8.3)	0	99
	Fishmeal	7.2	73.5	12.3	(7.0)	0	405
Carp, Mahasole <u>Barbus tor</u>	Muscle						
	Raw	70.3	25.2	2.3	1.2	1.0	126
Carp, Mrigala <u>Cirrhina mrigala</u>	Muscle	78.3	18.5	0.4	1.5	1.3	84
	Raw	75.0-81.1 14	14.4-19.5 16	0.1-0.8 11	1.0-1.6 10		
	Whole						
	Raw	74.0	10.6	1.0	(14.4)	0	51
	Fishmeal	7.5	78.4	4.0	(10.1)	0	350
Carp, Orange Fin <u>Labeo calbasu</u>	Muscle						
	Raw	79.1	16.6	1.1	1.4	1.8	84
		75.0-81.3 8	14.7-18.6 10	0.2-2.0 4	1.3-1.8 5		
	Dried	16.3	68.6 68.4-68.7 2	5.4	6.6	3.1	335
Carp, Reba <u>Cirrhina reba</u>	Muscle						
	Raw	79.4	16.2	1.3	1.3	1.8	84
		77.0-83.1 3	12.8-19.7 3	0.3-2.3 2	1.1-1.5 3		
Carp, Silver <u>Hypophthalmichthys molitrix</u>	Muscle						
	Raw	76.1	18.9	2.5 1.2-3.8 2	1.2	1.3	103
Carp, Tribolodon <u>Tribolodon haronensis</u>	Muscle						
	Raw	78.2	18.0	2.8 2.5-3.4 3	1.2	0	97
Carp Cyprinidae	Muscle						
	Raw	76.4	17.8	2.5	1.2	2.1	102
		64.5-80.4 19	15.4-22.4 22	0.7-9.0 30	0.5-1.7 15		
	Dried	8.0	74.0	6.4	11.6	0	354
	Dried & Smoked	14.9	79.2	1.4	4.5	0	329
Catfish, Air-breathing <u>Clarias fuscus</u>	Muscle						
	Raw	80.2	16.7	1.6	1.1	0.4	84
Catfish, Air-breathing <u>Clarias magur</u>	Muscle						
	Raw	76.6	16.5	4.3	1.5	1.1	109
		71.2-80.9 3	13.6-18.8 3	0.4-8.2 2	1.3-1.9 3		

Table 1.--Proximate composition of finfishes, whales, and products.

Common and Scientific Name	Description	Moisture	Protein	Fat	Ash	Carbo- hydrates ^{1/}	Calories ^{2/}
		%	%	%	%	%	Per 100 grams
Catfish, Air-breathing, Hito <u>Clarias batrachus</u>	Muscle Raw	77.7 76.3-79.9 8	17.5 15.0-19.7 9	2.8 0.4-4.8 7	1.4 1.1-2.1 7	0.6	98
Catfish, Air-breathing, Karmouth <u>Clarias lazariae</u>	Muscle Raw	82.2	15.7	1.1	1.0	0	73
Catfish, Electric <u>Malapterurus electricus</u>	Muscle Raw	79.7	18.1	0.9	1.3	0	82
Catfish, Fresh Water <u>Chrysichus nigrodigitatus</u>	Muscle Smoked	43.9	32.9	19.6	4.7	0	308
Catfish, Fresh Water <u>Neptuna thalassinus</u>	Muscle Raw	72.9	19.6	5.8	1.4	0.3	132
Catfish, Fresh Water <u>Pseudobagrus aurantiacus</u>	Muscle Raw	78.4	16.7	3.8	1.4	0	101
Catfish, Fresh Water, Bacha <u>Eutropichthys vacha</u>	Muscle Raw Dried	82.4 18.7	15.4 67.6	0.6 6.2	0.9 5.4	0.7 2.1	70 335
Catfish, Fresh Water, Bichua <u>Pseudoeutropius garus</u>	Muscle Raw	73.2	14.7	8.0	1.3	2.8	142
Catfish, Fresh Water, Bullhead, Black <u>Ictalurus melas</u>	Muscle Raw Offal Raw	81.5 80.4-82.6 4 77.3 76.9-77.6 2	16.2 16.0-16.3 4 14.6 14.2-14.9 2	1.7 1.2-2.3 4 5.6 5.4-5.7 2	1.0 3.4 2.7-4.0 2	0 0	80 109
Catfish, Fresh Water, Butter, Pabda <u>Callichrous bimaculatus</u>	Muscle Raw	77.2	14.4	2.6	1.2	4.6	99
Catfish, Fresh Water, Channel <u>Ictalurus punctatus</u>	Muscle Raw	75.7 71.8-79.4 5	17.6 15.7-20.5 5	5.2 0.7-11.0 5	1.1 0.9-1.5 5	0.4	119
Catfish, Fresh Water, Dwarf <u>Macrones cavasius</u>	Muscle Raw	79.2 77.4-80.3 4	16.9 15.8-17.5 3	0.3 0.0-0.5 2	1.6 1.2-1.9 2	2.0	78
Catfish, Fresh Water, Gomna <u>Rita rita</u>	Muscle Raw	78.8	18.6	0.4	1.2	1.0	82
Catfish, Fresh Water, Kired <u>Bagarius yarrelli</u>	Muscle Raw	77.2	13.7	2.1	1.0	6.0	78
Catfish, Fresh Water, Mulley <u>Wallagonia attu</u>	Muscle Raw	78.3 73.0-80.7 14	17.4 12.3-19.9 14	1.1 0.3-3.0 13	1.4 1.2-1.8 14	1.8	87
Catfish, Fresh Water, Pabda <u>Callichrous pabda</u>	Muscle Raw	81.2	12.3	1.5	1.0	4.0	79
Catfish, Fresh Water, Seenghara <u>Macrones seenghala</u>	Muscle Raw	78.9 75.5-80.4 10	17.3 15.3-19.3 10	0.3 0.1-0.5 9	1.5 1.2-1.8 10	2.0	80
Catfish, Fresh Water, Shengti <u>Macrones gluilo</u>	Muscle Dried	47.2	37.1	3.8	(11.9)	0	182

Table 1.--Proximate composition of finfishes, whales, and products.

Common and Scientific Name	Description	Moisture	Protein	Fat	Ash	Carbo- hydrates ^{1/}	Calories ^{2/}
		%	%	%	%	%	Per 100 grams
Catfish, Fresh Water, Striped, Dwarf <u>Macrones vittatus</u>	Muscle Raw	80.6 80.0-81.2 2	14.1 13.9-14.3 2	(4.2)	1.1	0	94
Catfish, Fresh Water Ictaluridae	Muscle Raw	72.3 64.1-81.6 5	18.2 17.4-22.1 7	8.2 1.3-20.6 5	1.5 0.9-2.1 3	0	157
Catfish, Sea <u>Arius arius</u>	Whole Raw Fishmeal	68.0 4.9	20.5 77.9	2.2 10.9	(9.3) (6.3)	0 0	102 410
Catfish, Sea <u>Arius leiotetocephalus</u>	Muscle Raw	77.7 77.2-78.1 2	21.0 20.7-21.2 2	0.6 0.5-0.6 2	1.2 1.1-1.3 2	0	89
Catfish, Sea <u>Arius thalassinus</u>	Muscle Raw	79.3	18.2	0.8	1.2	0.5	82
Catfish, Sea <u>Bagre macracanthus</u>	Muscle Raw	80.0	18.2	0.4	1.2	0.2	77
Catfish, Sea, Hardhead <u>Arius felis</u>	Whole Raw	71.5 69.8-72.7 6	16.4 15.4-17.4 6	6.0 4.3-8.8 6	5.9 4.2-7.0 6	0.2	120
Catfish, Sea, Manila <u>Arius manillensis</u>	Muscle Raw Salted & Dried	77.0 38.3 36.7-39.8 2	18.2 45.3 45.1-45.4 2	1.5 2.0 1.2-2.8 2	1.3 15.4 15.0-15.7 2	2.0 0	94 199
Catfish, Sea, Shingal <u>Arius dussumieri</u>	Muscle Raw	73.6 61.0-79.7 4	17.5 12.7-20.9 4	1.9 0.6-3.1 4	1.1 0.9-1.2 3	5.9	111
Catfish, Sea Ariidae	Muscle Raw Cooked Fried Battered Steamed Dried Dried & Smoked Salted Salted & Dried Smoked	78.6 74.5-81.1 7 61.9 73.6 16.2 7.1-20.9 3 11.5 36.0 32.3 26.5-38.1 2 42.8	17.6 16.1-19.3 7 18.8 20.4 66.1 62.5-71.1 3 77.6 37.6 43.9 42.7-45.1 2 32.9	3.6 0.2-16.8 7 10.5 3.7 10.1 6.3-14.4 3 8.0 5.4 1.8 1.2-2.4 2 19.6	1.2 1.0-1.5 7 (2.0) (2.3) 7.6 4.8-10.6 3 2.9 21.0 17.3 15.6-18.9 2 4.7	0 (6.8) 0 0 4.7 0	103 197 115 356 382 199 211 308
Catfish, Stinging <u>Saccobranchus fossilis</u>	Muscle Raw Whole Raw Fishmeal	75.5 72.0-82.9 5 76.0 6.9	18.5 14.5-22.8 7 16.0 81.4	1.0 0.6-1.3 3 1.1 7.0	1.5 1.3-1.7 3 (6.9) (4.7)	3.5 0 0	97 88 389
Cavefish <u>Amblyopsis godonmola</u>	Whole Raw	72.0	18.0	4.1	3.3	2.6	119

Table 1.--Proximate composition of finfishes, whales, and products.

Common and Scientific Name	Description	Moisture	Protein	Fat	Ash	Carbo- hydrates ^{1/}	Calories ^{2/}
		%	%	%	%	%	Per 100 grams
Characin <u>Prochilodus laticeps</u>	Muscle						
	Raw	73.1 71.2-74.6 5	19.6 15.4-25.1 5	2.3 1.4-2.8 5	1.7 1.5-2.5 5	3.3	112
Chub, Sea, Striped Rudder <u>Kyphosus lembus</u>	Muscle						
	Raw	75.9	21.1	2.0	1.1	0	102
Chub, Sea Kyphosidae	Muscle						
	Raw	79.1	18.7	1.2	1.1	0	86
Chub, Utah <u>Gila atraria</u>	Muscle						
	Raw	79.3	15.5	4.8	1.0	0	105
	Offal						
	Raw	64.3	13.1	20.2	3.3	0	234
Cichlid Cichlidae	Muscle						
	Raw	77.4 73.2-81.5 2	20.5 16.0-24.5 4	0.8 0.5-1.0 2	1.7 1.5-1.8 2	0	89
Cisco, Lake <u>Coregonus artedii</u>	Muscle						
	Raw	76.4 71.7-81.3 8	19.4 17.1-20.8 7	3.2 1.5-6.8 7	1.2 1.0-1.5 10	0	106
	Whole						
	Raw	74.0 72.9-75.1 2	17.4 16.6-18.2 2	6.8 5.6-8.0 2	2.3 2.2-2.4 2	0	97
	Fishmeal	9.8	68.3	7.8	12.8	1.3	349
	Offal						
	Raw	74.9	15.9	7.2	2.8	0	127
Cisco, Longjaw <u>Coregonus alpenae</u>	Muscle						
	Raw	73.3 71.2-76.3 3	15.3 12.4-16.9 3	10.3 10.0-10.8 3	1.1 1.0-1.1 3	0	154
	Offal						
	Raw	63.8	13.3	21.5	2.7	0	247
Cisco, Shortjaw <u>Coregonus zenithicus</u>	Muscle						
	Raw	72.6	17.8	9.0	1.2	0	152
Cisco, Shortnose <u>Coregonus reighardi</u>	Muscle						
	Raw	71.2	15.5	13.1	1.1	0	180
Cisco Salmonidae	Muscle						
	Raw	73.7 69.9-76.8 4	14.9 13.5-15.5 5	8.9 0.6-14.7 5	1.3 0.9-1.6 4	1.2	145
	Whole						
	Raw	72.8	15.8	9.6	2.0	0	150
Citharinus <u>Citharinus citharinus</u>	Muscle						
	Raw	70.3	23.8	3.7	2.2	0	129
	Dried & Smoked	14.4	75.1	5.7	4.8	0	352

Table 1.--Proximate composition of finfishes, whales, and products.

Common and Scientific Name	Description	Moisture	Protein	Fat	Ash	Carbo- hydrates ^{1/}	Calories ^{2/}
		%	%	%	%	%	Per 100 grams
Cobia <u>Rachycentron canadus</u>	Muscle Raw	74.9	18.9	5.4	1.3	0	124
		69.2-78.3 4	18.4-19.7 4	3.8-10.0 4			
Cod, Atlantic <u>Gadus morhua</u>	Muscle Raw	80.9	16.9	0.6	1.7	0	73
		72.4-83.5 36	15.0-19.6 35	0.1-1.2 39	1.0-2.4 25		
	Cooked Boiled, Salted	67.5	29.5	0.6	2.4	0	123
		15.6	79.2	1.4	3.8	0	329
	Dried	11.8-19.9 5	75.0-84.4 6	0.7-2.5 4	1.6-5.9 4		
		37.9	42.1	0.6	17.9	1.5	180
	Salted & Dried	11.8-54.8 9	19.0-78.0 8	0.3-2.5 8	8.4-24.7 7		
		58.1	23.7	0.4	17.9	0	98
	Salted & Smoked	50.5-65.7 2	20.3-27.1 2	0.3-0.4 2	13.6-22.1 2		
	Whole Raw	79.4	16.4	0.7	3.7	0	72
		79.3-79.4 2	15.8-16.9 3	0.5-0.9 2	3.5-3.8 2		
	Offal Raw	77.6	16.3	1.8	4.1	0	81
		76.3-78.5 3	15.9-16.8 3	0.3-4.3 3	3.4-4.6 3		
Cod, Pacific <u>Gadus macrocephalus</u>	Muscle Raw	82.1	16.7	0.7	1.0	0	70
		81.1-83.2 5	14.6-17.9 6	0.1-2.0 7	0.7-1.2 4		
	Hard Dried	21.8	58.0	1.5	18.8	0	246
		51.1	39.7	0.9	15.3	0	167
	Salted & Dried	43.9-58.3 2	31.1-53.0 3	0.5-1.4 3	10.2-20.4 3		
	Offal Raw	78.6	16.5	1.9	3.5	0	83
Cod Gadidae	Roe Raw	73.9	21.4	2.0	1.4	1.3	104
	Muscle Raw	81.0	17.4	0.5	1.3	0	74
		75.1-84.2 37	13.9-21.2 30	0.1-2.2 32	1.0-2.3 27		
	Canned In Brine	54.3	26.4	0.3	21.9	0	112
		53.5-55.0 2	25.4-27.3 2	0.3-0.3 2	19.0-24.7 2		
	Cooked Baked						
		In Spanish Sauce	19.3	1.4	1.9	0.5	97
	Fried Battered	65.2	20.2	7.5	1.3	5.9	172
		60.9-69.4 2	19.6-20.7 2	4.7-10.3 2			
	Grilled With Butter	64.6	27.0	5.3	(3.1)	0	168

Table 1.--Proximate composition of finfishes, whales, and products.

Common and Scientific Name	Description	Moisture	Protein	Fat	Ash	Carbo- hydrates ^{1/}	Calories ^{2/}
		%	%	%	%	%	Per 100 grams
	Kabob						
	With Bacon	71.8	17.4	6.3	1.8	2.7	134
	With Tomato Sauce	67.3	20.5	3.5	2.2	6.5	124
	Rice Loaf	72.6	14.7	2.7	2.1	7.9	92
	Steamed	76.8	20.2	0.8	(2.3)	0	97
		74.3-79.2	18.0-22.4	0.7-0.9	(1.9)-(2.6)		
		2	2	2	2		
	Dried						
	Moderately	29.6	59.1	1.7	12.5	0	302
		12.3-39.5	42.0-81.8	1.0-2.8	6.7-22.0		
		7	8	8	7		
	Moisture Free	0.0	89.9	2.5	5.4	(4.5)	404
			87.0-92.8	1.6-3.4	5.1-5.6		
			2	2	2		
	Fish Stick						
	Raw	67.7	15.8	0.4	(16.1)	0	132
		66.6-68.2	15.7-15.9	0.4-0.4	(15.5)-(17.3)		
		3	3	3	3		
	Fried	59.8	14.3	7.7	1.6	16.6	193
		56.2-63.2	13.2-15.6	6.6-8.3			
		4	4	5			
	Lightly Salted	71.7	21.0	0.6	7.2	0	118
		71.4-72.0	20.0-22.0	0.5-0.7			
		2	3	3			
	Salted & Dried	37.6	42.2	1.2	20.2	0	260
		17.0-53.5	25.4-72.0	0.3-2.5	8.3-24.7		
		12	17	18	12		
	FPC	5.1	91.5	0.2	5.0	0	388
		4.5-6.1	89.1-93.3	0.1-0.2	1.9-8.4		
		4	5	2	5		
	Whole						
	Dried	18.3	56.1	1.3	25.1	0	337
		2.2-34.1	44.7-66.8	0.5-2.2	20.0-35.4		
		4	4	4	4		
	Fishmeal	6.3	72.7	2.8	19.4	0	394
		2.8-11.7	67.4-77.5	0.9-3.9	16.6-25.3		
		3	4	4	4		
	FPC	4.9	77.5	0.2	17.4	0	381
		0.7-9.7	74.0-84.7	0.1-0.3	13.1-22.6		
		6	6	5	6		
	Offal						
	FPC	3.5	87.2	0.1	11.4	0	395
	Roe						
	Raw	72.5	22.3	1.9	1.5	1.8	112
		69.7-75.3	20.4-24.3	1.3-2.4	1.4-1.8		
		6	6	6	4		
	Cooked						
	Boiled & Fried	62.0	20.6	11.9	(5.5)	0	211
	In Vinegar	71.1	24.0	3.2	(1.7)	0	132
	Salted	58.7	17.8	5.9	10.0	7.6	164
		53.7-63.7	17.7-17.9	0.4-11.3	6.7-13.2		
		2	2	2	2		
Combtooth, Blenny	Muscle						
<u>Blennius palmicornis</u>	Raw	76.5	18.5	4.3	1.2	0	113
Combtooth, Blenny	Muscle						
<u>Blennius pavo</u>	Raw	77.0	19.7	2.8	1.0	0	104
Combtooth, Blenny	Muscle						
<u>Blennius tentacularis</u>	Raw	79.9	17.6	2.0	1.2	0	88
Combtooth, Butterfly Blenny	Muscle						
<u>Blennius ocellaris</u>	Raw	75.8	20.7	2.8	1.2	0	108

Table 1.--Proximate composition of finfishes, whales, and products.

Common and Scientific Name	Description	Moisture	Protein	Fat	Ash	Carbo- hydrates ^{1/}	Calories ^{2/}
		%	%	%	%	%	Per 100 grams
Combtooth, Tompot Blenny <u>Blennius gattoruggine</u>	Muscle Raw	79.0	18.4	1.8	1.2	0	81
Coral Cod <u>Cephalopholis miniatus</u>	Muscle Raw	78.2	19.2	1.0	1.4	0	86
Coralfish, Goat Breem <u>Sargus annularis</u>	Muscle Raw	77.2	20.3	1.5	1.2	0	95
Crevalle <u>Caranx diedaba</u>	Muscle Dried	32.2	48.4	12.6	3.7	3.1	319
Crevalle, Jack <u>Carangoides ajax</u>	Muscle Cooked Fried	67.2	24.2	5.4	2.1	1.1	150
Crevalle, Jack <u>Caranx carangus</u>	Muscle Raw	77.2 77.0-77.4 2	18.8 18.5-19.1 2	1.9 1.1-2.7 2	1.7 1.5-1.8 2	0.4	94
	Whole Dried	12.5	40.5	14.3	22.9	9.8	330
Crevalle Carangidae	Muscle Raw	76.6 76.2-76.9 2	20.7 19.9-21.4 2	1.7 0.7-2.7 2	1.3 1.2-1.3 2	0	98
Croaker <u>Micropogon barretoii</u>	Whole Raw FPC	75.0 6.7	19.0 79.0	3.1 1.8	(2.9) (12.1)	0 (0.4)	104 334
Croaker <u>Micropogon opercularis</u>	Whole Raw	78.0	17.0	2.8	(2.2)	0	93
Croaker <u>Otolithus brachygnathus</u>	Muscle Raw	79.0	19.2	0.6	1.2	0	82
Croaker <u>Sciaena deliciosa</u>	Muscle Raw	75.9 74.5-76.5 4	18.6 16.0-19.7 4	2.0 1.0-3.1 3	1.4 1.2-1.5 3	2.1	92
	Salted & Dried	36.6 28.4-44.8 2	36.8 30.9-42.6 2	3.6 2.0-5.2 2	18.7 18.6-18.7 2	4.3	197
Croaker, Aba <u>Johnius belengeri</u>	Muscle Raw	79.5 76.8-80.9 4	17.4	1.7	1.5	0	75
Croaker, Atlantic <u>Micropogon undulatus</u>	Muscle Raw	78.4 72.5-84.3 5	17.5 14.1-19.4 5	1.5 0.4-2.9 5	1.1 0.9-1.3 5	1.5	90
	Whole Raw	75.3 69.9-77.2 11	16.1 15.2-17.8 11	3.8 1.3-8.6 11	4.7 2.7-6.2 11	0	99
	Offal Raw	73.7 69.8-77.5 2	15.0 14.3-15.7 2	4.2 0.4-8.0 2	6.4 5.7-7.1 2	0.7	101

Table 1.--Proximate composition of finfishes, whales, and products.

Common and Scientific Name	Description	Moisture	Protein	Fat	Ash	Carbo- hydrates ^{1/}	Calories ^{2/}
		%	%	%	%	%	Per 100 grams
Croaker, Banded <u>Larimus fasciatus</u>	Whole	74.6	17.7	3.7	4.0	0	104
	Raw	74.1-75.6 3	17.6-17.8 3	2.3-4.4 3			
Croaker, Black <u>Pogonias cromis</u>	Muscle						
	Raw	79.8	18.4	0.5	1.2	0	78
	FPC	8.3	81.8	0.4	3.6	5.9	354
Croaker, Corvina <u>Micropogon furnjeri</u>	Muscle						
	Raw	78.5	19.5	0.7	1.2	0	84
	Whole	77.8	18.3	1.8	3.2	0	89
	Raw	77.5-78.1 2	18.2-18.4 2	1.7-1.8 2	3.1-3.2 2		
Croaker, Robalo <u>Sciaena starksei</u>	Muscle						
	Raw	78.7	16.1	2.8	0.9	1.5	96
		76.7-80.6 2	13.4-18.8 2				
	Salted & Dried	12.2	53.7	2.2	30.7	1.2	239
Croaker, Roncador <u>Ophioscion venezuelae</u>	Muscle						
	Raw	78.9	19.1	0.8	1.5	0	84
		78.2-79.5 2	18.8-19.3 2	0.5-1.1 2	1.1-1.8 2		
Croaker, Smooth Scaled <u>Pseudosciaena anea</u>	Muscle						
	Raw	78.8	19.1	0.4	1.0	0.7	83
	Salted & Dried	37.2	39.3	6.1	17.1	0.3	212
Croaker, Smooth Scaled <u>Sciaena dussumieri</u>	Muscle						
	Raw	75.5	18.9	2.0	1.4	3.2	106
Croaker, Verrugato <u>Sciaena ranchus</u>	Muscle						
	Raw	79.6	17.2	0.9	1.0	1.2	81
		79.1-80.0 2					
Croaker, Whiskered <u>Umbrina russelle</u>	Muscle						
	Raw	77.0	19.9	1.7	1.4	0	95
		76.7-77.2 3	19.9-20.0 3	1.7-1.7 3	1.2-1.7 3		
Croaker, White, Nibe <u>Argyrosomus argentata</u>	Muscle						
	Raw	79.4	15.9	3.6	1.0	0	96
		78.3-80.0 3	13.2-18.6 2	1.8-5.3 2	0.6-1.3 2		
	Canned In Oil	34.5	30.9	12.3	17.7	4.6	253
Croaker, Yellow <u>Umbrina steindachneri</u>	Muscle						
	Raw	77.3	19.7	2.7	1.2	0	103
Cusk <u>Brosme brosme</u>	Muscle						
	Raw	80.5	18.5	0.6	1.2	0	79
		77.8-82.6 8	16.9-20.0 10	0.2-1.8 6	0.8-1.5 4		
	Cooked						
	Baked						
	Battered	65.8	19.3	4.3	(1.2)	9.4	144
	Steamed	74.3	22.4	0.7	(2.6)	0	96

Table 1.--Proximate composition of finfishes, whales, and products.

Common and Scientific Name	Description	Moisture	Protein	Fat	Ash	Carbo- hydrates ^{1/}	Calories ^{2/}
		%	%	%	%	%	Per 100 grams
Cusk-Eel <u>Lepophidium brevibarbe</u>	Muscle Raw	81.4	17.7	0.3	1.1	0	74
Cusk-Eel, Bearded Ophidium <u>Ophiodon barbatum</u>	Muscle Raw	78.0	20.1	0.4	1.7	0	84
Cusk-Eel, Congrio Colorado <u>Genypterus chiliensis</u>	Muscle Raw	80.7 80.0-81.3 2	15.5	0.2	1.1	2.5	74
Cusk-Eel, Congrio Negro <u>Genypterus maculatus</u>	Muscle Raw	80.3 77.6-83.0 2	17.6	2.1	1.7	0	89
Cusk-Eel, Kingklip <u>Genypterus capensis</u>	Muscle Raw	81.7	17.1	0.1	1.1	0	69
Cusk-Eel, Ling <u>Genypterus blacodes</u>	Muscle Raw	81.4	15.8	0.2	1.1	1.5	71
Cutlassfish <u>Lepidopus caudatus</u>	Muscle Raw	72.8	20.8	2.5	1.4	2.5	116
Cutlassfish <u>Trichiurus japonicus</u>	Muscle Raw	65.0 63.0-66.9 2	17.1 17.0-17.2 2	14.6 5.9-20.7 3	1.0	2.3	209
Cutlassfish <u>Trichiurus lepturus</u>	Whole Raw	77.0 75.4-78.8 6	17.3 16.3-18.1 6	3.4 2.6-4.3 6	2.6 2.3-3.5 6	0	100
Cutlassfish <u>Trichiurus savala</u>	Muscle Raw	75.7 74.7-76.6 2	20.1 18.1-22.0 2	2.0 0.8-3.2 2	1.7 1.5-1.9 2	0.5	100
	Salted & Dried	6.7	76.1	8.7	(8.5)	0	383
Cutlassfish, Ribbonfish <u>Trichiurus haumela</u>	Muscle Raw	79.3 77.1-81.5 3	17.9 16.8-19.1 3	1.2 0.3-2.1 2	1.4 0.9-1.7 3	0.2	83
	Dressed Dried	17.0	61.5	7.2	10.6	3.7	311
	Whole Dried	38.0	33.7	4.3	23.5	0.5	176
Cutlassfish Trichiuridae	Muscle Raw	75.4 74.0-76.7 2	18.3 17.4-19.4 3	5.3 4.6-6.0 2	1.4 1.3-1.5 2	0	120
	Salted	61.2	21.7	7.7	7.8	1.6	167
Dab <u>Limanda limanda</u>	Muscle Raw	81.9 77.9-85.8 2	15.1 12.1-18.0 2	2.1 0.4-3.8 6	1.1 1.0-1.3 2	0	84
Dab Pleuronectidae	Muscle Raw	77.9 76.3-79.4 2	16.0	2.1	1.9	2.1	91

Table 1.--Proximate composition of finfishes, whales, and products.

Common and Scientific Name	Description	Moisture	Protein	Fat	Ash	Carbo- hydrates ^{1/}	Calories ^{2/}
		%	%	%	%	%	Per 100 grams
Dace	Muscle						
Cyprinidae	Dried	11.2	54.6	20.1	9.1	5.0	419
Damselfish	Muscle						
<u>Chromis chromis</u>	Raw	75.0	19.9	1.8	2.0	1.3	101
Dogfish, Cazon	Muscle						
<u>Carcharius aetholorus</u>	Raw	74.3	24.5	0.2	1.1	0	100
Dogfish, Lesser Spotted	Muscle						
<u>Halaelurus burgerii</u>	Raw	75.8	20.2	0.6	0.9	2.5	96
Dogfish, Smooth	Muscle						
<u>Mustelus canis</u>	Raw	77.6	26.1 25.4-27.6 3	0.2	1.4 1.3-1.6 3	0	106
Dogfish, Spiny	Muscle						
<u>Squalus acanthias</u>	Raw	72.8 69.5-75.1 6	17.6 16.2-19.6 6	9.5 4.8-15.3 10	1.3 0.8-1.8 4	0	156
	Cooked Fishloaf	67.3	18.6	11.9	0.2	2.0	190
	Roe						
	Raw	48.4 46.8-50.0 2	25.0	24.3 23.5-25.0 2	0.9 0.8-1.0 2	1.4	324
Dogfish, White	Muscle						
<u>Mustelus dorsalis</u>	Smoked	26.8	52.2	1.8	18.7	0.5	227
Dogfish	Muscle						
Squalidae	Raw	74.4 72.0-81.2 7	19.6 16.2-22.4 8	5.2 0.2-10.0 5	1.4 1.2-1.5 4	0	131
	Roe						
	Raw	50.0	25.0	23.5	1.0	0	316
	Tail						
	Cooked						
	Fried						
	Battered	44.4	17.9	25.2	(1.4)	(11.1)	343
Dolphin, Dorado	Muscle						
<u>Aurata aurata</u>	Raw	80.5 80.0-81.0 2	17.6 17.0-18.1 2	1.6 1.0-2.2 2	(0.3)	0	85
Dolphin, Mai Mai, Dorado	Muscle						
<u>Coryphaena hippurus</u>	Raw	76.4 74.6-78.4 3	19.3 18.5-20.1 4	1.1 0.2-3.2 5	1.4 1.3-1.5 3	1.8	94
	Cooked						
	Fried						
	Breaded	57.5	15.8	8.6	1.5	16.6	207
	Broiled	69.8	26.3	0.4	2.0	1.3	114
Dolphin	Muscle						
Coryphaenidae	Raw	75.4 72.8-78.0 2	18.6 16.8-20.4 2	3.2 0.6-8.1 3	2.2 1.3-3.3 2	6	106

Table 1.--Proximate composition of finfishes, whales, and products.

Common and Scientific Name	Description	Moisture	Protein	Fat	Ash	Carbo- hydrates ^{1/}	Calories ^{2/}
		%	%	%	%	%	Per 100 grams
Dory, John <u>Zeus capensis</u>	Muscle Raw	78.0	18.3	3.4 1.2-6.3 4	1.2	0	104
Dory, John <u>Zeus faber</u>	Muscle Raw	78.3 73.8-80.3 4	17.8 15.6-21.0 4	1.4 0.5-3.3 7	1.4 1.0-1.9 4	1.1	88
Dory, John <u>Zeus japonicus</u>	Muscle Raw	77.6	21.0	0.6	1.3	0	89
Dory, John Zeidae	Muscle Cooked Steamed	76.7	19.9	1.4	(1.3)	0.7	95
Drepane <u>Drepane africana</u>	Muscle Raw	79.6	18.0	1.6	0.8	0.8	90
	Dressed Raw	71.3 70.8-72.2 4	19.6 19.3-20.3 4	3.1 2.4-3.7 4	5.2 4.6-6.2 4	0.8	110
Drepane, Concertinafish <u>Drepane punctata</u>	Muscle Raw	78.0 76.2-79.7 6	19.3 18.9-19.7 6	1.5 0.9-2.0 6	1.5 1.1-2.9 6	0	91
Drum <u>Cynoscion striatus</u>	Muscle Raw FPC	76.7 5.8	18.2 83.9	2.1 0.9	(3.0) 2.2	0 7.2	104 353
Drum, Corvina <u>Sciaena gilberti</u>	Muscle Raw	74.0 71.5-76.8 4	19.9 19.0-21.6 4	1.7 0.9-2.4 2	1.5 1.4-1.5 2	2.9	107
Drum, Dhoma <u>Sciaena glauca</u>	Muscle Raw	78.3	19.0	(1.8)	0.9	0	92
Drum, Fresh Water <u>Aplodinotus grunniens</u>	Muscle Raw	76.7 73.9-82.9 10	17.4 15.9-18.4 11	5.5 1.0-8.4 11	1.1 1.0-1.1 14	0	119
	Whole Raw	71.4 68.7-75.6 3	16.0 14.9-16.6 3	7.6 2.5-11.9 3	4.9 4.3-5.6 3	0	132
	Fishmeal	8.9	62.4	8.4	20.5	0	325
	Offal Raw	72.1	13.2	7.2	8.0	0	118
Drum, Ovea <u>Sciaena breviceps</u>	Muscle Raw	77.6	19.5	1.2	1.2	0.5	91
Drum, Popa <u>Sciaenoides pama</u>	Whole Raw	20.0	59.3	7.3	9.6	3.8	318
Drum, Red <u>Sciaenops ocellata</u>	Muscle Raw	79.1	19.0	1.0	0.8	0	85
Drum, Star <u>Stellifer lanceolatus</u>	Whole Raw	76.0 75.7-76.3 2	15.5 15.0-16.0 2	3.7 3.6-3.8 2	4.2 4.1-4.3 2	0.6	98

Table 1.--Proximate composition of finfishes, whales, and products.

Common and Scientific Name	Description	Moisture	Protein	Fat	Ash	Carbo- hydrates ^{1/}	Calories ^{2/}
		%	%	%	%	%	Per 100 grams
Drum <i>Sciaenidae</i>	Muscle						
	Raw	77.5	18.5	2.5	1.2	0.3	98
		70.0-80.6	13.5-21.6	0.3-6.0	1.0-1.6		
		20	19	20	18		
	FPC	5.6	94.0	0.2	2.8	0	378
	Whole						
	Dried	9.9	75.2	7.9	7.0	0	372
	Dried & Smoked	14.2	73.1	3.1	9.6	0	320
Eel, Barbel <i>Plotosus anguillaris</i>	Muscle						
	Raw	78.6	19.0	0.7	1.7	0	82
Eel, Conger <i>Conger conger</i>	Muscle						
	Raw	75.4	17.9	5.3	1.4	0	119
		69.9-79.5	15.4-21.0	1.3-11.4	1.1-2.2		
		7	8	8	7		
Eel, Conger <i>Conger myriaster</i>	Muscle						
	Raw	71.8	17.6	9.4	1.2	0	155
		71.6-72.0	16.1-19.0	8.0-10.7	1.0-1.4		
		2	2	2	2		
Eel, Conger, American <i>Conger oceanicus</i>	Muscle						
	Raw	74.8	18.5	11.6	0	0	178
Eel, Conger Congridae	Muscle						
	Raw	71.3	17.6	11.1	1.0	0	170
		56.2-79.9	15.3-19.5	3.3-11.2	1.0-1.1		
		5	6	5	4		
	Cooked						
	Fried						
	Battered	52.7	18.7	20.0	(1.0)	7.6	285
	Steamed	73.3	22.8	1.8	2.1	0	107
Eel, Fresh Water, American <i>Anguilla rostrata</i>	Muscle						
	Raw	67.0	18.2	13.3	1.3	1.5	199
		65.9-68.0	16.9-19.5	11.6-14.9	1.1-1.4		
		2	2	2	2		
Eel, Fresh Water, European <i>Anguilla anguilla</i>	Muscle						
	Raw	67.8	16.6	15.0	1.2	0	201
		60.0-76.8	8.1-21.0	2.9-25.9	0.7-1.9		
		10	12	14	8		
	Dried	54.0	41.6	18.4	2.3	0	232
Eel, Fresh Water, Japanese <i>Anguilla japonica</i>	Muscle						
	Raw	69.6	16.8	16.1	1.2	0	212
				12.4-19.7			
				2			
	Cooked						
	Broiled	49.1	21.4	20.0	2.9	6.6	292
Eel, Fresh Water Anguillidae	Muscle						
	Raw	62.9	16.4	19.0	1.6	0	237
		54.9-71.0	11.9-20.0	10.5-28.4	0.8-3.3		
		9	9	9	8		
	Cooked						
	Unspecified	64.0	15.0	20.0	1.0	0	240
		54.2-73.8	13.0-17.0	8.0-32.0	0.8-1.2		
		2	2	2	2		
	Dried & Smoked	24.0	42.5	28.7	3.5	1.3	434
				27.3-30.0			
				2			
	Salted & Dried	20.0	35.0	27.5	17.5	0	388
	Whole						
	Raw	81.8	12.6	2.2	(3.4)	0	70

Table 1.--Proximate composition of finfishes, whales, and products.

Common and Scientific Name	Description	Moisture	Protein	Fat	Ash	Carbo- hydrates ^{1/}	Calories ^{2/}
		%	%	%	%	%	Per 100 grams
Eel, Moray <u>Gymnothorax ocellata</u>	Whole Raw	79.6	17.3	1.5	3.1	0	83
Eel, Moray, Greek <u>Muraena helena</u>	Muscle Raw	72.4 69.8-75.1 4	18.2 16.5-21.2 5	6.7 1.9-13.3 5	1.6 1.1-1.9 4	1.1	133
Eel, Moray Muraenidae	Muscle Raw	72.0	20.1	4.0	1.2	2.7	116
	Whole Raw	77.7	19.1	1.3	3.4	0	88
Eel, Pike Conger <u>Muraenesox telabonoides</u>	Muscle Raw	80.0	16.9	0.5	0.9	1.7	79
Eel, Pike Conger, Silver <u>Muraenesox cinereus</u>	Muscle Raw	77.3 65.9-81.8 10	18.1 14.4-21.5 10	5.4 0.2-27.8 10	1.4 0.6-2.0 9	0	121
	Cooked Stewed	49.2	17.7	32.4	(0.7)	0	362
	Roe Raw	67.9	21.5	7.4	0.8	2.4	162
Eel, Snake, Murrel <u>Ophicephalus marulius</u>	Muscle Raw	76.9 73.2-80.0 3	15.0 10.6-17.5 3	4.3 0.4-8.2 2	1.4 1.3-1.4 2	2.4	108
	Dried	12.9	74.2	3.2	4.8	4.9	345
Eel, Snake, Murrel <u>Ophicephalus punctatus</u>	Muscle Raw	78.4 74.0-81.1 16	17.1 14.5-20.6 18	0.7 0.1-2.1 13	1.5 1.3-2.6 14	2.3	84
Eel, Snake, Murrel <u>Ophicephalus striatus</u>	Muscle Raw	78.3 75.8-80.5 12	18.1 16.2-20.1 15	1.1 0.1-5.3 13	1.2 0.8-1.6 12	1.3	88
	Salted & Dried	30.7	47.8	1.9	16.5	3.1	221
Eel, Snake Ophichthidae	Muscle Raw	75.5 71.6-78.8 7	18.0 16.7-19.4 5	5.4 0.6-9.1 5	1.1 0.9-1.5 5	0	121
	Dried & Smoked	16.2	73.1	8.3	2.4	0	367
Eel, Snipe <u>Avocettina infans</u>	Whole Raw	80.7	7.3	2.8	3.7	5.5	76
Eel, Spiny <u>Mastacembelus armatus</u>	Muscle Raw	77.0 75.2-78.8 2	14.6 11.9-17.3 2	2.8 2.2-3.4 2	1.3 1.0-1.5 2	4.3	101
Eel, Spiny <u>Mastacembelus favus</u>	Muscle Raw	79.4	19.3	0.3	0.9	0	80
Eel, Spiny <u>Notacanthus nasus</u>	Muscle Raw	70.5 67.5-73.5 2	17.7 16.6-18.7 2	8.8 5.4-12.2 2	1.1	1.9	158

Table 1.--Proximate composition of finfishes, whales, and products.

Common and Scientific Name	Description	Moisture	Protein	Fat	Ash	Carbo- hydrates ^{1/}	Calories ^{2/}
		%	%	%	%	%	Per 100 grams
Eel, Spiny <i>Notacanthidae</i>	Muscle Raw	76.9	18.1	0.8	1.4	2.8	91
		74.7-79.0 2	17.3-18.8 2				
Eel, Swamp, Field <i>Fluta alba</i>	Muscle Raw	82.0	16.5	0.7	0.8	0	72
Eel, Swamp, Palos <i>Synbranchis bengalensis</i>	Muscle Raw	81.0	16.8	1.2	0.6	0.4	80
		80.5-81.4 2	16.1-17.5 2	1.2-1.2 2	0.4-0.8 2		
Emperor <i>Lethrinus karwa</i>	Muscle FPC	5.6	80.8	6.1	5.1	2.4	388
Emperor, Long-nosed <i>Lethrinus miniatus</i>	Muscle Raw	77.3	20.2	1.4	0.9	0.2	94
Emperor, Spangled <i>Lethrinus nebulosus</i>	Muscle Raw	76.4	19.6	0.8	1.3	1.9	93
		75.2-77.8 4	17.6-20.8 4	0.2-2.0 4	1.2-1.3 3		
Emperor <i>Lethrinidae</i>	Muscle Raw	79.5	12.4	1.8	1.0	5.3	87
		78.0-81.8 3	16.2-20.4 3	0.5-4.1 3	1.0-1.1 3		
Featherback <i>Notopterus notopterus</i>	Muscle Raw	76.8	16.5	0.8	1.6	4.3	90
		73.0-80.5 3	10.3-19.8 4	0.1-1.3 3	1.0-2.5 3		
Featherback, Chitala <i>Notopterus chitala</i>	Muscle Raw	77.3	16.4	1.3	1.0	4.0	93
		70.0-79.9 6	11.3-18.6 5	0.2-2.3 5	1.0-1.1 5		
Filefish <i>Balistidae</i>	Muscle Raw	78.6	19.4	0.3	1.5	0.2	81
			18.5-20.2 3	0.2-0.4 3			
Flathead, Deep Sea <i>Platycephalus macrodon</i>	Muscle Raw	81.1	18.7	1.2	1.0	0	86
		79.1-83.0 2					
Flathead, Indian <i>Platycephalus indicus</i>	Muscle Raw	78.4	19.4	1.2	1.4	0	88
		77.4-80.0 7	17.6-20.6 8	0.2-2.0 7	1.0-1.9 7		
	Whole Raw	79.9	9.7	0.7	5.7	4.0	68
		79.3-80.4 2	8.5-10.8 2	0.6-0.8 2	4.6-6.8 2		
Flathead <i>Percophidae</i>	Muscle Raw	77.1	20.9	1.1	1.1	0	94
		75.0-79.2 2	20.0-21.7 2	0.2-2.0 2	1.0-1.1 2		
Flounder <i>Platichthys flesus</i>	Muscle Raw	79.4	16.3	3.2	1.8	0	94
		76.9-83.0 4	15.0-17.4 4	0.6-4.9 4	1.4-2.4 3		

Table 1.--Proximate composition of finfishes, whales, and products.

Common and Scientific Name	Description	Moisture	Protein	Fat	Ash	Carbo- hydrates ^{1/}	Calories ^{2/}
		%	%	%	%	%	Per 100 grams
	Offal						
	Raw	72.5	15.4	8.7	4.5	0	140
		72.2-72.7	15.3-15.4	8.5-8.8	4.4-4.5		
		2	2	2	2		
Flounder, Gulf	Muscle						
<u>Paralichthys albigutta</u>	Raw	78.5	20.2	0.8	1.4	0	88
Flounder, Southern	Muscle						
<u>Paralichthys lethostigma</u>	Raw	79.6	18.9	1.2	1.2	0	86
Flounder, Starry	Muscle						
<u>Platichthys stellatus</u>	Raw	80.2	17.1	1.8	1.1	0	85
		77.6-82.5	16.1-17.9	0.8-3.5	1.0-1.1		
		3	4	3	4		
Flounder, Starry, Hiram	Muscle						
<u>Paralichthys olivaceus</u>	Raw	78.1	19.4	1.3	1.2	0	89
		76.8-79.4	17.6-20.9	0.2-2.2	1.2-1.3		
		4	6	8	3		
Flounder, Stone	Muscle						
<u>Kareius bicoloratus</u>	Raw	77.6	20.4	0.8	1.4	0	89
		76.0-79.2	18.4-22.3	0.4-1.3	1.3-1.5		
		2	2	2	2		
	Roe						
	Raw	69.1	24.8	2.5	1.3	2.3	131
Flounder, Summer	Muscle						
<u>Paralichthys dentatus</u>	Raw	78.8	20.0	0.4	1.1	0	84
		76.8-80.4	18.2-21.2	0.1-1.0	0.9-1.1		
		5	6	4	5		
	Offal						
	Raw	71.9	16.9	4.6	5.9	0.7	112
		67.1-76.6	15.7-18.0	2.2-6.9	4.8-6.9		
		2	2	2	2		
Flounder, Winter	Muscle						
<u>Pseudopleuronectes americanus</u>	Raw	80.1	18.0	0.6	1.2	0	77
		75.4-81.8	13.9-21.7	0.2-1.4	1.1-1.3		
		8	9	9	6		
	Offal						
	Raw	73.5	17.0	3.5	6.2	0	100
		67.5-77.0	16.3-18.1	1.1-7.4	5.1-7.4		
		4	4	4	4		
Flounder, Witch	Muscle						
<u>Glyptocephalus cynoglossus</u>	Raw	80.7	16.2	0.6	0.7	1.8	77
		79.1-82.2		0.1-1.0	0.2-1.1		
		2		3	2		
	Cooked						
	Fried	58.1	17.6	14.1	(10.2)	0	197
	Steamed	77.7	19.0	1.1	(2.2)	0	86
	Offal						
	Raw	80.9	14.1	1.2	3.8	0	67
Flounder, Yellowtail	Muscle						
<u>Limanda ferruginea</u>	Raw	80.4	19.9	0.3	1.2	0	87
		76.5-82.4	17.5-22.3	0.1-0.4	1.2-1.3		
		7	2	2	3		
	Offal						
	Raw	75.3	16.2	0.8	5.8	1.9	80

Table 1.--Proximate composition of finfishes, whales, and products.

Common and Scientific Name	Description	Moisture	Protein	Fat	Ash	Carbo- hydrates ^{1/}	Calories ^{2/}
		%	%	%	%	%	Per 100 grams
Flounder <u>Bothidae/Pleuronectidae</u>	Muscle						
	Raw	78.5	18.1	1.4	1.3	0.7	88
		74.0-84.6	14.0-22.5	0.1-4.8	0.8-2.3		
		23	22	25	18		
	Cooked						
	Baked	58.1	30.0	8.2	2.2	1.5	200
	Baked-Stuffed	66.3	19.5	6.5	2.5	5.2	157
	Fried	61.5	17.0	12.9	(1.3)	(7.3)	213
	Salad	76.2	11.9	6.5	1.5	3.9	112
	Unspecified	68.5	20.5	6.0	5.0	0	156
		62.5-74.4	19.9-21.1	3.3-8.7	0.8-2.1		
		2	2	2	2		
	Offal						
	Fishmeal	6.3	59.9	10.2	23.2	0.4	330
Flyingfish <u>Cypselurus opisthopus</u>	Muscle						
	Raw	77.1	20.9	0.5	1.5	0	88
		77.0-77.1	20.6-21.2	0.4-0.5			
		2	2	2			
	Salted	67.3	27.3	1.3	9.0	0	121
Flyingfish, Small Scaled <u>Cypselurus oligolepis</u>	Muscle						
	Raw	75.3	21.0	0.2	1.3	2.2	94
Flyingfish, Tropical Two-Winged <u>Exocoetus volitans</u>	Muscle						
	Raw	74.7	21.2	0.9	1.5	1.7	100
		71.8-77.0	19.2-23.5	0.6-1.1	1.4-1.6		
		3	5	3	3		
Galjoen <u>Dipteron saltator capensis</u>	Muscle						
	Raw	73.1	18.2	5.2	1.3	3.5	134
		72.9-73.2	16.0-20.3	4.9-5.4			
		2	2	2			
Garfish <u>Belone acus</u>	Muscle						
	Raw	76.3	19.8	1.7	1.7	0.5	97
		74.6-79.6	16.5-22.4	0.8-2.1	1.4-1.8		
		3	3	3	3		
Garfish <u>Tylosurus giganteus</u>	Muscle						
	Raw	70.4	26.6	0.9	1.7	0.4	121
Garfish, Foli <u>Belone belone</u>	Muscle						
	Raw	74.7	20.9	2.5	1.9	0	106
Garfish, Houndfish <u>Tylosurus crocodilus</u>	Muscle						
	Raw	74.0	23.9	0.8	1.4	0	108
		70.8-77.2	21.1-26.6	0.6-0.9	1.1-1.7		
		2	2	2	2		
Garfish Belonidae	Muscle						
	Raw	78.0	19.0	0.4	1.4	1.2	84
			17.3-20.6	0.3-0.5			
			2	2			
Giant Perch <u>Lates calcarifer</u>	Muscle						
	Raw	78.7	17.2	0.8	1.3	2.0	84
		74.8-82.0	12.6-20.8	0.3-1.7	1.0-1.7		
		10	7	8	8		
Glassfish <u>Salangichthys microdon</u>	Muscle						
	Raw	86.1	11.5	1.0	1.4	0	55

Table 1.--Proximate composition of finfishes, whales, and products.

Common and Scientific Name	Description	Moisture	Protein	Fat	Ash	Carbo- hydrates ^{1/}	Calories ^{2/}
		%	%	%	%	%	Per 100 grams
Goatfish <u>Upeneus vittatus</u>	Muscle Raw	75.1	23.3	0.4	0.6	0.6	99
Goatfish, Ca'phen <u>Parupeneus indicus</u>	Muscle Raw	80.3	17.4	0.4	0.9	1.0	77
Goatfish, Golden Banded <u>Upeneus moluccensis</u>	Muscle Raw	75.9 74.4-77.3 2	19.8 19.6-19.9 2	3.4 2.4-4.4 2	1.7 1.6-1.8 2	0	110
Goatfish, Kumu <u>Parupeneus porphyreus</u>	Muscle Cooked Broiled	71.6	23.1	2.2	2.1	1.0	116
Goatfish, Red Mullet <u>Mullus barbatus</u>	Muscle Raw	74.9 68.6-77.4 13	18.6 16.0-22.6 14	5.3 2.0-10.8 15	1.4 0.8-1.8 13	0	122
Goatfish, Red Mullet <u>Mullus surmulletus</u>	Muscle Raw	76.2 74.5-77.6 5	18.5 16.9-19.9 5	3.1 1.1-4.7 5	2.2 1.1-4.0 5	0	102
Goatfish, Red Mullet <u>Upeneus tragula</u>	Muscle Raw	76.5 75.4-77.5 2	19.4 19.2-19.6 2	1.4 0.6-2.2 2	1.6 1.5-1.6 2	1.1	95
Goatfish, Yellow <u>Upeneoides sulphureus</u>	Muscle Raw	78.0	18.7	1.3	1.2	0.8	90
Goatfish Mullidae	Muscle Raw	75.6 72.7-79.4 4	20.4 18.3-22.9 6	2.8 1.0-6.5 6	1.1 1.0-1.2 3	0	107
	Salted & Dried	43.1 42.6-43.6 2	36.9 33.1-40.7 2	5.4 4.1-6.7 2	13.9 12.4-15.3 2	0.7	199
Goby <u>Gobionellus ophthalmonen</u>	Muscle Raw	81.8	15.4	1.1	1.9	0	72
Goby <u>Gobius auratus</u>	Muscle Raw	80.0	16.1	3.1	1.3	0	92
Goby <u>Gobius minutulus</u>	Muscle Raw	78.8	18.2	2.3	1.3	0	94
Goby, Black <u>Gobius niger</u>	Muscle Raw	82.9	14.4	2.1	1.1	0	77
Goby, Chiozzo <u>Gobius jozo</u>	Muscle Raw	77.2	19.9	0.4	1.5	1.0	87
Goby, Flathead <u>Glossogobius giuris</u>	Muscle Raw	79.9 76.5-82.8 13	17.5 14.5-22.0 13	1.0 0.1-2.4 11	1.4 0.6-2.3 12	0	79
Goby, Goldspot <u>Gnatholepis thompsoni</u>	Muscle Raw	80.0	16.1	3.1	(0.8)	0	92
Goby, Gudgeon <u>Gobius paganellus</u>	Muscle Raw	78.4 77.0-79.8 2	16.5 16.4-16.6 2	1.8 1.0-2.6 2	2.1 1.2-2.9 2	1.2	91

Table 1.--Proximate composition of finfishes, whales, and products.

Common and Scientific Name	Description	Moisture	Protein	Fat	Ash	Carbo- hydrates ^{1/}	Calories ^{2/}
		%	%	%	%	%	Per 100 grams
Goby, Long Tailed <u>Gobionellus longicaudus</u>	Muscle Raw	78.1	16.6	2.7	2.6	0	90
Goby, Mudskipper <u>Boleophthalmus dussumieri</u>	Muscle Raw	76.4	19.4	0.6	1.7	1.9	91
Goby, Round <u>Neogobius melanostomus</u>	Muscle Raw	80.3	17.9	0.4	1.2	0	75
Goby, Sea Trout, Merluzza <u>Macrodon ancylodon</u>	Muscle Raw	78.4	20.5	1.0	1.4	0	91
	Whole Raw	76.9 75.0-78.1 12	18.2 17.6-18.7 12	3.3 1.6-5.2 12	2.3 2.0-2.6 12	0	103
Goby, Yellowfin <u>Gobius (Acanthogobius) flavimanus</u>	Muscle Raw	78.2 76.9-79.5 2	18.7	0.7 0.3-1.1 2	1.7	0.7	84
Goby Gobiidae	Muscle Raw	79.2 78.2-80.6 5	18.0 16.3-18.7 5	1.4 0.9-2.5 4	1.4 0.8-1.7 4	0	85
	Cooked Boiled	78.2	19.0	1.0	1.8	0	92
	Salted & Fermented	66.4	12.5	1.9	16.1	3.1	80
Goldfish, Funa <u>Carassius auratus</u>	Muscle Raw	78.1 73.4-82.8 2	16.3 14.6-18.0 2	3.0 0.3-7.5 4	1.0 0.9-1.1 2	1.6	99
Goonch <u>Bagarius bagarius</u>	Muscle Raw	79.6 78.7-80.3 2	16.5 15.5-17.5 2	0.2 0.1-0.2 2	1.5 1.3-1.7 2	2.2	77
Goosefish, Monkfish <u>Lophius budegassa</u>	Muscle Raw	82.5 81.4-83.6 2	15.5 15.2-15.7 2	0.7 0.3-1.0 2	1.1 0.9-1.2 2	1.1	73
Goosefish, Monkfish <u>Lophius litulus</u>	Muscle Raw	85.0	12.8	0.6	0.9	0.7	59
Goosefish, Monkfish <u>Lophius piscatorius</u>	Muscle Raw	80.3 68.4-84.2 8	15.5 10.6-23.2 7	1.5 0.1-7.5 9	1.4 1.0-2.0 5	1.3	81
	Cooked Boiled	76.6	21.3	0.7	0.6	0.8	95
Goosefish, Monkfish <u>Lophius setigerus</u>	Muscle Raw	79.3	18.7	0.7 0.5-0.8 2	1.2	0	81
Goosefish, Monkfish Lophiidae	Muscle Raw	77.5 76.1-79.0 3	20.3 18.7-22.6 3	0.8	1.2	0	88
	Cooked Fried						
	Battered	66.3	17.0	8.2	(2.5)	(16.7)	209
	Parboiled	78.8	18.7	0.3	0.9	1.3	83
	Steamed	75.4	21.8	0.9	(1.9)	0	95

Table 1.--Proximate composition of finfishes, whales, and products.

Common and Scientific Name	Description	Moisture	Protein	Fat	Ash	Carbo- hydrates ^{1/}	Calories ^{2/}
		%	%	%	%	%	Per 100 grams
Greenling, Atka, Mackerel <u>Pleurogrammus azonus</u>	Muscle Raw	73.6	16.8	7.3	1.1	1.2	138
		65.5-77.3 4	17.0-19.0 4	2.5-19.3 4	0.8-1.3 4		
Grouper <u>Paracentropristis hepatus</u>	Muscle Raw	77.6	19.9	1.3	1.5	0	91
		77.1-78.0 2	19.7-20.0 2	1.2-1.4 2	1.1-1.8 2		
Grouper, Black <u>Mycteroperca bonaci</u>	Muscle Raw	78.2	20.4	0.7	1.2	0	88
Grouper, Merou <u>Epinephelus aeneus</u>	Muscle Raw	78.7	19.5	1.6	1.3	0	92
Grouper, Merou <u>Epinephelus goreensis</u>	Muscle Raw	79.3	18.1	0.8	1.4	0.4	81
		78.8-79.8 2	18.1-18.2 2	0.2-1.4 2	0.9-1.8 2		
Grouper, Merou Rouge <u>Epinephelus taeniops</u>	Muscle Raw	78.9	19.5	0.6	1.5	0	83
Grouper, Red <u>Epinephelus morio</u>	Muscle Raw	78.6	19.5	1.3	1.1	0	90
		75.7-79.8 4	19.0-19.9 4	0.2-4.0 4			
Grouper, Spotted <u>Epinephelus corallicola</u>	Muscle Raw	78.9	18.2	0.4	1.2	1.3	82
		77.4-79.7 8	15.6-20.8 8	0.3-0.4 8	1.0-1.6 8		
	Dried	40.7	38.9	2.0	5.3	13.1	226
Grouper, Yellowbelly <u>Epinephelus gigas</u>	Muscle Raw	78.3	19.1	1.0	1.3	0.3	87
		77.5-79.2 5	18.6-19.8 5	0.7-1.3 5	0.9-1.8 5		
Grouper Serranidae	Muscle Raw	78.0	20.1	1.0	1.4	0	89
		76.3-79.2 4	19.4-20.9 4	0.7-1.3 4	1.1-1.7 4		
Grunt <u>Anisotremus scapularis</u>	Muscle Raw	75.7	20.2	2.4	1.4	0.3	104
		73.4-78.0 2	19.6-20.8 2	0.4-4.4 2	1.3-1.5 2		
	Cooked						
	Baked	75.1	21.0	1.0	1.7	1.2	98
	Dried	(0.4)	78.1	16.5	5.0	0	461
Roe	Raw	84.0	12.3	1.0	2.4	0.3	59
Grunt <u>Hapalogenys mucronatus</u>	Muscle Raw	79.9	17.6	1.4	1.2	0	83
Grunt <u>Parapristipoma trilineatum</u>	Muscle Raw	74.1	19.3	5.0	1.5	0	122
		71.8-76.3 2	17.0-21.5 2	4.7-5.3 2	1.4-1.6 2		
Grunt <u>Pristipoma jubelini</u>	Muscle Raw	76.8	21.0	1.1	1.1	0	94
Whole	Raw	70.6	19.7	2.4	6.0	1.3	106
		70.1-71.3 4	19.5-20.0 4	2.0-2.8 4	5.6-6.4 4		

Table 1.--Proximate composition of finfishes, whales, and products.

Common and Scientific Name	Description	Moisture	Protein	Fat	Ash	Carbo- hydrates ^{1/}	Calories ^{2/}
		%	%	%	%	%	Per 100 grams
Grunt, Besugo, Bangkoknok <u>Pomadasys argyreus</u>	Muscle Raw	76.5 75.6-77.8 5	18.3 17.7-19.2 5	0.9 0.7-1.3 5	2.6 1.3-3.5 5	1.7	88
Grunt, Bluestriped <u>Haemulon sciurus</u>	Muscle Raw	78.2	21.2	0.6	1.5	0	90
	Whole Raw	70.3 70.2-70.4 2	17.4 16.6-18.2 2	7.8 5.7-9.9 2	4.7 3.7-5.6 2	0	140
Grunt, Dorade <u>Parapristipoma mediterraneum</u>	Muscle Raw	78.7	17.7	1.9	1.7	0	88
Grunt, Mojaría <u>Anisotremus interruptus</u>	Muscle Raw	77.3	19.1	2.7	1.1	0	106
Grunt, Silver <u>Pomadasys hasta</u>	Muscle Raw	79.1 77.2-79.8 4	19.2 18.6-21.1 4	0.6 0.2-0.7 4	1.5 1.3-1.6 4	0	82
Grunt, White <u>Haemulon plumieri</u>	Muscle Raw	80.0	19.5	0.2	1.1	0	80
Grunt Pomadasyidae	Muscle Raw	78.7 76.0-80.6 4	17.6 15.9-19.9 3	2.5 0.8-5.3 4	1.3 1.3-1.4 3	0	93
	Whole Raw	72.4	19.6	2.3	5.7	0	99
	Roe Raw	66.6	25.7	5.4	1.5	0.8	155
Grunter, Red <u>Pagellus notalensis</u>	Muscle Raw	78.1	19.2	0.5	1.4	0.8	85
Guitarfish, Fiddlefish <u>Rhinobatus hynnicephalus</u>	Muscle Raw	76.2	16.2	6.4	1.2	0	122
Guitarfish, Guitarra <u>Rhinobatus planiceps</u>	Muscle Dried	27.9	64.9	0.9	4.5	1.8	268
Gurnard, Red <u>Chelidonichthys kumu</u>	Muscle Raw	77.7 76.2-79.2 2	18.8 17.6-19.9 2	1.7 0.3-2.8 2	1.2 1.1-1.2 2	0.6	93
Haddock <u>Melanogrammus aeglefinnus</u>	Muscle Raw	80.6 78.5-82.7 60	18.2 15.4-20.4 51	0.5 0.1-1.0 39	1.3 1.1-2.7 33	0	77
	Cooked Baked						
	Stuffed	62.2	19.5	9.9	2.7	5.7	190
	Fish Sticks	53.1	15.8	11.0	10.1	10.0	202
	Fried						
	Battered & Breaded	65.6 65.1-66.0 2	20.2 20.0-20.4 2	7.1 5.9-8.3 2	(2.3)	4.8	164

Table 1.--Proximate composition of finfishes, whales, and products.

Common and Scientific Name	Description	Moisture	Protein	Fat	Ash	Carbo- hydrates ^{1/}	Calories ^{2/}
		%	%	%	%	%	Per 100 grams
	In Oven	66.1	17.2	5.0	1.9	9.8	153
	Unspecified	67.7	20.2	6.0	1.9	4.2	152
	In Mustard Sauce	74.5	16.2	5.5	1.8	2.0	126
	Steamed						
	Smoked	71.6	22.3	0.9	(5.2)	0	97
	Unspecified	77.2	20.9	0.8	(1.1)	0	91
		75.1-79.3	19.9-22.0				
		2	2				
	Smoked	72.9	23.1	0.3	3.6	0	95
		72.5-73.5	23.0-23.3	0.2-0.3			
		3	3	3			
	FPC	9.3	86.2	2.4	4.3	0	361
		5.9-12.5	76.8-90.3	0.2-7.8	3.1-4.9		
		4	4	4	4		
	Offal						
Hake, Chilean <u>Merluccius gayi</u>	Fishmeal	(10.4)	62.9	1.8	25.1	0	268
		(8.6)-(12.1)	61.8-64.0	1.3-2.2	24.8-25.3		
		2	2	2	2		
	Muscle						
	Raw	80.6	17.3	0.4	1.4	0.3	73
	Whole						
	Dried	9.2	73.8	9.4	11.7	0	380
			71.3-76.3	6.5-12.2	7.5-15.9		
			2	2	2		
	Fishmeal	9.8	70.0	6.8	13.7	0	341
	FPC	5.6	77.5	1.0	17.7	0	319
		4.0-7.1	75.5-79.5	0.2-1.7	16.2-19.1		
		2	2	2	2		
Hake, European <u>Merluccius merluccius</u>	Muscle						
	Raw	79.9	17.0	1.4	1.3	0.4	82
		72.8-84.9	13.7-18.8	0.2-6.0	0.9-1.8		
		18	14	15	11		
	Whole						
	Fishmeal	2.4	86.7	3.2	7.5	0.2	376
	Roe						
	Raw	72.8	17.3	6.0	1.8	2.1	132
	Muscle						
	Raw	81.2	16.6	1.7	1.2	0	82
		80.1-81.7	16.1-18.4	0.7-2.5	1.1-1.3		
		6	7	6	6		
	Whole						
	Raw	79.4	14.5	3.6	3.1	0	90
		72.9-82.7	12.3-16.0	1.4-6.0	2.8-3.4		
Hake, Pacific <u>Merluccius productus</u>		18	18	18	18		
	Fishmeal	7.3	68.0	12.9	13.6	0	388
		4.5-8.5	64.2-74.6	5.7-18.4	11.4-15.2		
		5	5	5	5		
Hake, Silver, Whiting <u>Merluccius bilinearis</u>	Muscle						
	Raw	80.3	16.6	1.3	1.2	7.2	107
		78.7-82.4	15.2-16.9	0.2-2.4	1.0-1.4		
		12	11	11	12		
	Dried	9.2	76.3	6.6	7.5	0.4	365
	Whole						
	Fishmeal	5.6	81.5	9.7	5.3	0	413

Table 1.--Proximate composition of finfishes, whales, and products.

Common and Scientific Name	Description	Moisture	Protein	Fat	Ash	Carbo- hydrates ^{1/}	Calories ^{2/}
		%	%	%	%	%	Per 100 grams
	Offal Raw	77.7 75.4-79.7 3	14.5 13.3-15.5 3	2.7 0.3-4.7 3	4.3 3.5-5.9 3	0.8	85
Hake, Spotted <u>Urophycis regius</u>	Whole Raw	83.4	12.8	0.8	3.0	0	58
Hake, Squirrel <u>Urophycis chuss</u>	Muscle Raw	82.0	16.4 15.9-16.7 3	0.5 0.4-0.6 3	1.2	0	70
	Whole Raw	80.8	16.2	0.8	3.9	0	68
	Dried	3.4 2.5-4.7 4	76.6 74.5-77.4 4	14.7 14.1-15.3 4	12.8 12.4-13.4 4	0	437
	FPC	4.6	85.8 82.3-88.9 13	0.3 0.1-0.5 13	14.1 12.0-14.8 13	0	346
	Offal Raw	71.6	14.1	5.3	3.0	6.0	128
Hake Gadidae	Muscle Raw	79.3 72.3-83.2 12	17.0 15.2-20.7 11	1.2 0.3-2.7 11	1.5 0.9-3.4 11	1.0	83
	Cooked Fried						
	Battered & Breaded	62.0	19.3	11.4	(1.5)	5.8	180
	Steamed	76.1	18.5	3.3	(2.1)	0	104
	Whole Raw	69.8	21.8	5.4	3.0	0	136
	Dried	14.8	78.5	1.4	5.9	0	333
	Fishmeal	5.9	80.4	2.1	16.8	0	340
	Roe Raw	70.0	23.4	1.8	5.2	0	110
Halfbeak <u>Hemiramphus intermedius</u>	Muscle Raw	76.8	21.0	0.9	1.3	0	92
Halfbeak <u>Hemiramphus sajori</u>	Muscle Raw	78.0	18.6	2.3 2.1-2.4 2	1.9	0	95
Halfbeak, Burguing <u>Hemiramphus far</u>	Muscle Raw	78.6 76.8-80.3 2	18.9 17.2-20.6 2	1.3 1.2-1.4 2	1.0 0.6-1.4 2	0.2	88
Halfbeak, Non-spotted <u>Hemiramphus georgii</u>	Muscle Raw	80.3	17.1	1.4	0.6	0.6	83
Halfbeak Exocoetidae	Muscle Raw	77.4 76.1-78.9 6	20.6 18.6-21.0 6	0.9 0.4-1.6 7	1.3 0.9-1.7 6	0	91
Halibut, Atlantic <u>Hippoglossus hippoglossus</u>	Muscle Raw						
	Dark meat	74.3 71.7-76.9 2	18.4 18.0-18.8 2	6.2 3.9-8.5 2	1.1	0	129

Table 1.--Proximate composition of finfishes, whales, and products.

Common and Scientific Name	Description	Moisture	Protein	Fat	Ash	Carbo- hydrates ^{1/}	Calories ^{2/}
		%	%	%	%	%	Per 100 grams
	Light meat	78.7 77.2-79.9 3	19.6 19.0-20.1 2	0.8 0.4-1.1 3	0.9	0	86
	Unspecified	77.7 75.0-82.9 9	18.0 17.1-18.5 3	2.7 0.6-8.3 11	1.1	0.5	98
	Smoked & Salted	49.5	20.8 20.5-21.0 2	15.0	2.0	12.7	269
Halibut, Pacific <u>Hippoglossus stenolepis</u>	Muscle						
	Raw						
	Cheeks	79.8 79.5-80.7 4	19.2 18.5-19.4 4	0.7 0.7-0.8 4	1.2 1.1-1.3 4	0	83
	Dark meat	71.6 67.2-75.2 4	16.9 15.4-18.2 4	10.6 5.7-16.7 4	1.2 1.0-1.3 4	0	163
	Unspecified	78.0 69.1-81.8 21	19.9 15.0-23.6 19	1.3 0.4-6.0 22	1.3 1.2-1.4 17	0	91
Halibut Pleuronectidae	Muscle						
	Raw	74.6 67.3-79.7 10	18.7 15.0-23.5 9	4.3 0.4-13.2 11	1.1 1.0-1.2 4	1.3	119
	Cooked						
	A La Mexicana	73.1	12.4	7.1	1.7	5.7	136
	Broiled	66.6	25.2	7.0	1.7	0	164
	In Olive Roll	69.8	10.0	6.5	2.3	11.4	144
	Piquante	66.9	19.9	10.9	1.6	0.7	180
	Rarebit						
	Casserole	69.6	10.2	4.7	1.9	13.6	138
	Steamed	70.9	22.7	4.0	(2.4)	0	127
	Salted, Smoked and Dried	49.4	20.7	15.0	15.0	0	218
Harvestfish <u>Peprilus alepidotus</u>	Whole						
	Raw	76.6 76.3-76.8 2	15.9 15.1-16.7 2	4.4 3.8-4.9 2	2.7 2.5-2.8 2	0.4	104
Hatchetfish <u>Argyropelecus affinis</u>	Whole						
	Raw	77.9	8.0	6.1	4.1	3.9	103
Herring <u>Ilisha africana</u>	Muscle						
	Raw	79.1	18.6	1.2	1.1	0	85
Herring, Anchova <u>Temnodon saltator</u>	Whole						
	Dried	12.5	58.9	2.3	26.8	0	256
Herring, Atlantic <u>Clupea harengus</u>	Muscle						
	Raw	74.3 70.1-78.0 5	18.0 17.0-18.9 4	9.8 2.4-20.2 44	1.6 1.5-1.7 2	0	160
	Whole						
	Raw	70.8	17.2 16.4-18.0 2	16.4 12.8-20.0 2	2.4	0	216
	Canned						
	In mustard	68.6	19.9 19.7-20.0 2	9.9 7.9-11.8 2	3.6 3.5-3.7 2	0	169
	In oil	60.2 55.1-62.6 4	17.4 17.5-23.9 5	16.4 12.1-17.5 5	3.4 2.9-3.9 5	2.6	228

Table 1.--Proximate composition of finfishes, whales, and products.

Common and Scientific Name	Description	Moisture	Protein	Fat	Ash	Carbo- hydrates ^{1/}	Calories ^{2/}
		%	%	%	%	%	Per 100 grams
	In tomato sauce	67.9 65.3-70.4 2	16.8 15.8-17.7 2	12.4 10.5-14.2 2	3.1 2.8-3.3 2	0	179
	Unspecified	64.0 59.7-62.8 3	19.8 17.0-21.6 5	13.4 12.3-15.1 4	3.1 2.3-3.9 4	0	200
	Smoked	55.0 46.0-64.0 2	22.5 21.5-23.5 2	13.6 11.5-15.2 4	(8.9)	0	212
	Fishmeal	8.8 7.0-10.5 3	74.1 72.6-75.5 3	14.9 12.6-17.1 3	10.3 10.2-10.4 2	0	430
	Defatted	6.0 4.6-9.5 4	79.4 76.2-80.8 4	(4.0) (3.3)-(5.3) 4	10.7 10.5-11.2 4	0	354
	Herring Atlantic Thread <u>Opisthonema oglinum</u>						
	Muscle Raw	74.9 74.7-75.1 2	21.3 21.1-21.4 2	2.4 2.3-2.4 2	1.8	0	107
	Whole Raw	70.4 68.1-74.4 5	18.5 17.8-19.4 5	7.1 3.5-10.4 5	3.6 3.2-4.6 5	0.4	138
	Herring, Bachiva, Bacha <u>Clupisoma garua</u>						
	Muscle Raw	77.9 76.4-79.3 2	18.5 18.1-18.8 2	2.8 1.2-4.4 2	1.3	0	99
	Herring, Bleeker, Tunsoy <u>Harengula moluccensis</u>						
	Muscle Raw	79.4	16.4	2.5	1.6	0	88
	Herring, Deep Bodied <u>Sardinella perforata</u>						
	Muscle Raw	75.6 73.8-77.3 2	18.8 18.3-19.3 2	2.5 0.3-4.6 2	2.0 1.7-2.3 2	1.1	98
	Herring, Fimbriated, Tunsoy <u>Sardinella fimbriata</u>						
	Muscle Raw	76.2 75.1-77.8 8	19.6 18.3-21.8 8	1.6 0.3-2.9 7	2.0 1.3-3.5 8	0.6	95
	Dried	26.8 10.8-42.7 2	44.8 38.0-51.5 2	10.8 19.1-2.4 2	16.2 13.8-18.6 2	1.4	282
	Dried & Smoked	22.7	54.0	9.8	13.5	0	304
	Salted & Dried	44.3 42.7-45.8 2	38.0	2.4	13.8	1.5	180
	Whole Raw	74.7 71.3-78.0 2	19.4 18.3-20.4 2	2.6 1.6-3.6 2	2.8 2.1-3.4 2	0.5	103
	Herring Indian <u>Pellona brachysoma</u>						
	Muscle Raw	72.8	20.3	3.2	1.5	2.2	119
	Herring, Machete <u>Ethmidium chilcae</u>						
	Muscle Raw	73.6 72.1-75.2 4	18.2 15.2-19.5 4	4.7 2.0-6.1 3	1.3 1.2-1.4 3	2.2	124
	Salted, Smoked and Dried	15.4	52.9	20.2	10.1	1.4	399

Table 1.--Proximate composition of finfishes, whales, and products.

Common and Scientific Name	Description	Moisture	Protein	Fat	Ash	Carbo- hydrates ^{1/}	Calories ^{2/}
		%	%	%	%	%	Per 100 grams
Herring, Pacific <u>Clupea pallasii</u>	Muscle Raw	72.8	18.3	8.5	1.3	0	150
		69.0-76.6 5	16.0-25.2 5	2.6-12.5 6	1.2-1.3 5		
	Canned	69.9	19.2	7.5	2.3	1.1	149
		68.9-70.9 2	17.6-20.8 2	5.1-9.9 2	1.9-2.6 2		
	Dried	26.3	52.4	14.3	4.8	0	338
		18.0-36.0 3	44.5-67.8 3	7.8-24.0 4	3.4-6.5 3		
	Salted	62.5	18.5	10.2	9.4	0	166
		58.1-66.8 2	17.4-19.6 2	9.0-11.3 2	6.8-12.0 2		
	Smoked	40.0	32.8	18.5	7.7	1.0	302
	Whole Raw	70.1	15.7	13.6	2.4	0	185
		57.7-80.2 37	10.2-17.8 37	4.1-24.4 37	1.6-2.8 37		
Herring, Round <u>Dussumieria acuta</u>	Roe Raw	77.5	17.1	1.6	2.1	1.7	90
		77.1-77.8 3	16.3-18.0 3	0.5-2.7 3	1.4-3.4 3		
	Dried	57.4	29.0	11.5	1.9	0.2	220
Herring, Round <u>Etrumeus micropus</u>	Muscle Raw	76.1	19.2	1.4	2.0	1.3	95
Herring, Round <u>Etrumeus teres</u>	Muscle Raw	71.7	21.8	5.5	1.6	0	137
	Dark meat	76.5	19.1	2.7	1.4	0.3	102
		61.6	16.5	9.6	2.2	10.1	193
	Whole Raw	74.6	18.8	2.7	3.8	0	100
Herring, Skipjack <u>Alosa chrysochloris</u>	Whole Raw	73.8-75.3 2	18.7-18.9 2	2.4-3.0 2	3.7-3.8 2		
		73.6	19.6	3.2	2.5	3.6	122
Herring, Wolf <u>Chirocentrus dorab</u>	Muscle Raw	75.8	20.7	0.9	1.5	1.1	91
		75.2-76.5 4	19.8-21.6 4	0.2-2.2 4	0.9-1.9 4		
Herring Clupeidae	Muscle Raw	71.5	17.7	2.8	1.6	6.4	122
		62.8-81.2 31	6.8-21.5 29	1.3-19.2 37	0.8-2.1 23		
	Canned In tomato sauce	66.7	16.7	12.8	2.6	1.2	187
			15.8-17.6 2	11.2-14.4 2			
	Unspecified	50.2	27.9	14.4	8.2	0	241
		34.6-65.8 2	18.8-36.9 2	12.9-15.8 3	3.1-13.2 2		
	Cooked Baked	58.7	23.2	11.4	(6.7)	0	195

Table 1.--Proximate composition of finfishes, whales, and products.

Common and Scientific Name	Description	Moisture	Protein	Fat	Ash	Carbo- hydrates ^{1/}	Calories ^{2/}
		%	%	%	%	%	Per 100 grams
	Dried	25.9 12.9-34.6 3	50.3 36.9-67.6 4	20.9 6.5-40.5 4	9.5 5.2-13.2 4	0	389
	Kipperd	53.1 34.5-62.3 4	26.0 20.0-36.3 5	11.0 3.2-15.8 5	5.1 1.6-9.2 4	4.8	222
	Salted & Dried	45.5 42.0-49.0 2	35.7	9.4 6.0-12.7 2	15.4 14.3-16.4 2	0	227
	Whole						
	Raw	73.0 66.9-78.2 6	17.6 16.4-19.1 4	7.4 2.6-15.1 6	2.8 2.3-3.7 4	0	137
	Cooked						
	Baked						
	In Vinegar	67.5	16.9	12.9	(2.7)	0	184
	Fried	58.7	21.8	15.1	(4.4)	0	223
	Salted	64.8	18.2 17.5-18.9 2	9.0	8.5	0	154
	Smoked	42.8 36.6-48.2 6	31.9 19.0-53.3 8	8.6 1.5-18.5 7	7.3 6.0-8.3 4	9.4	243
	Fishmeal	6.8 0.2-14.7 31	73.0 52.1-83.8 34	8.9 2.9-23.7 36	11.5 8.9-17.0 19	0	372
	FPC	8.2	87.2 84.2-89.7 4	0.4 0.1-0.5 3	7.8 6.8-10.2 4	0	352
	Roe						
	Raw	71.6 65.8-82.2 5	20.0 15.1-25.2 4	4.0 2.4-6.8 6	1.7 1.3-2.8 4	2.7	127
	Cooked						
	Fried						
	Floured	52.3	23.4	15.8	(1.7)	(6.8)	236
	Dried	18.0	67.5	10.7	3.4	0.4	368
Hottentot	Muscle						
<u>Caranthus blochii</u>	Raw	77.0	18.9	2.0	1.4	0.7	96
Jacopever	Muscle						
<u>Sebastichthys capensis</u>	Raw	78.4	19.5	0.3	1.2	0.6	83
	Whole						
	Raw	74.5	17.3	3.5	4.8	0	101
Jewfish	Muscle						
<u>Pseudosciaena coiber</u>	Raw	77.8 77.3-78.3 2	19.0 18.8-19.2 2	1.5 0.8-2.2 2	1.6 1.3-1.9 2	0	90
	Salted & Dried	14.5	46.2	5.8	21.8	11.7	284
Jewfish	Muscle						
<u>Sciaena antarctica</u>	Raw	80.2	18.1	(0.3)	1.5	0	74
Jewfish	Muscle						
<u>Sciaena sina</u>	Raw	73.6 69.7-77.4 2	17.9 17.3-18.4 2	0.7 0.4-0.9 2	1.9 1.4-2.4 2	5.9	102
Jewfish, California	Muscle						
<u>Stereolepis gigas</u>	Raw	81.8	18.0	0.1	1.1	0	73

Table 1.--Proximate composition of finfishes, whales, and products.

Common and Scientific Name	Description	Moisture	Protein	Fat	Ash	Carbo- hydrates ^{1/}	Calories ^{2/}
		%	%	%	%	%	Per 100 grams
Jumper <u>Lactarias lactarias</u>	Muscle Raw	73.3	19.4	5.8	1.4	0	130
Kabeljou <u>Sciaena hololepidotus</u>	Muscle Raw	77.5 76.9-78.1 2	19.2 18.6-19.8 2	2.3 1.4-3.0 4	1.1 0.9-1.3 2	0	98
	Salted & Dried	6.8	57.2	6.4	29.6	0	286
Katsuo <u>Euthynnus (Katsuwonus) vagans</u>	Muscle Raw	72.3 71.3-73.2 2	25.5 25.2-25.8 2	1.3 0.2-2.3 2	1.3	0	114
Kingfish, Cavalla <u>Caranx speciosus</u>	Muscle Raw	77.6	21.3	0.2	1.9	0	87
Kingfish, Whiting <u>Menticirrhus americanus</u>	Muscle Raw	77.3 75.3-79.2 2	18.3 17.7-18.9 2	3.1 0.9-5.2 2	1.3 1.2-1.3 2	0	101
	Whole Raw	76.3	15.5	6.1	2.2	0	117
Kingfish Carangidae	Muscle Raw	76.8	19.2	1.5	1.4	1.1	95
Kiyi <u>Coregonus kiyi</u>	Muscle Raw	74.5	15.8	8.7	1.1	0	142
Ladyfish <u>Elops saurus</u>	Muscle Raw	79.2	19.4	0.3 0.3-0.4 2	1.4	0	80
Lampfish, Mexican <u>Triphoturus mexicanus</u>	Whole Raw	71.3	9.2	13.0	2.7	3.8	169
Lamprey <u>Entosphenus japonicus</u>	Muscle Raw	60.3	21.0	14.2 7.4-18.0 4	0.7	3.8	227
	Dried	36.3	33.3	29.0	1.2	2.5	404
Lamprey, River <u>Lampetra ayresi</u>	Muscle Raw	71.1	15.0	13.0	(0.9)	0	177
Lamprey Petromyzontidae	Muscle Raw	66.2 60.0-71.1 3	16.0 13.1-21.0 4	15.5 13.0-18.8 7	0.7	1.6	204
	Canned	63.3	16.9	12.2	4.0	3.6	192
	Dried	22.3 8.5-36.0 2	35.2 33.3-37.0 2	41.2 29.0-53.3 2	1.7 1.2-2.1 2	0	512
Lance, Sand <u>Ammodytes langeolatus</u>	Muscle Raw	78.5 78.0-79.0 2	18.2 17.9-18.5 2	0.9 0.3-1.5 2	2.8	2.4	91
Lance, Sand <u>Ammodytes personatus</u>	Muscle Dried	12.1	62.3	9.6	13.7	2.3	345

Table 1.--Proximate composition of finfishes, whales, and products.

Common and Scientific Name	Description	Moisture	Protein	Fat	Ash	Carbo- hydrates ^{1/}	Calories ^{2/} Per 100 grams
		%	%	%	%	%	
Lanternfish <u>Lampanyctus regalis</u>	Whole Raw	86.3	5.7	2.9	2.5	2.6	59
Lanternfish <u>Lampanyctus ritteri</u>	Whole Raw	70.6	11.6	11.8	1.9	4.1	169
Lanternfish, Blue <u>Tarletonbeania crenularis</u>	Whole Raw	77.1	12.0	3.4	4.5	3.0	91
Lanternfish, California Headlightfish <u>Diaphus theta</u>	Whole Raw	66.1	12.2	19.5	3.1	0	224
Lanternfish, Northern <u>Stenobrachius leucopsarus</u>	Whole Raw	66.8	10.6	13.1	3.4	6.1	185
Leatherjacket <u>Lichia glauca</u>	Muscle Raw	75.9 75.4-76.3 2	19.9 19.8-19.9 2	1.6 0.8-2.3 2	1.5 1.4-1.5 2	1.4	100
	Dried	21.5 17.9-25.0 2	56.5 56.0-57.0 2	3.2 2.6-3.8 2	20.5 19.6-21.3 2	0	255
Leatherjacket, Yellow <u>Scomber lyson</u>	Muscle Raw	76.3 75.8-76.9 6	19.8 15.5-22.7 6	2.4 0.5-6.4 6	1.8 1.2-2.1 6	0	101
Leerfish <u>Lichia amia</u>	Muscle Dried	23.5	39.4	5.1	22.8	9.2	240
Levovangan <u>Monotaxes grandoculis</u>	Muscle Raw	78.1 77.0-79.2 4	18.8 17.1-20.0 4	1.1 0.6-1.8 4	1.2 0.8-1.4 4	0.3	88
Lightfish <u>Cyclothone acclinidens</u>	Whole Raw	79.4	8.7	6.1	3.5	2.3	99
Ling <u>Molva molva</u>	Muscle Raw	79.2 77.7-81.7 3	18.9 16.1-21.0 7	0.4 0.1-0.7 5	1.1 0.5-1.5 3	0.4	81
	Cooked Fried						
	Battered & Breaded	55.2	16.8	12.4	(1.1)	(4.5)	179
	Steamed	74.6	22.4	0.8	2.2	0	97
Lingcod <u>Ophiodon elongatus</u>	Muscle Raw	79.5 78.4-81.1 4	18.0 16.7-19.4 6	0.9 0.5-1.3 6	1.2	0.4	82
	Offal Raw	75.0	15.6	5.7	4.2	0	114
Lizardfish <u>Saurida argyrophanes</u>	Muscle Raw	79.6 77.5-81.7 2	18.9 16.7-21.0 2	1.3	1.2	0	87
Lizardfish <u>Saurida gracilis</u>	Muscle Raw	77.6	20.0 19.4-20.6 2	0.5 0.2-0.7 2	1.3 1.1-1.4 2	0.6	87
Lizardfish <u>Saurida tumbil</u>	Muscle Raw	78.2 77.9-78.4 2	19.4 18.8-20.0 2	0.4 0.1-0.6 2	1.4	0.6	84

Table 1.--Proximate composition of finfishes, whales, and products.

Common and Scientific Name	Description	Moisture	Protein	Fat	Ash	Carbo- hydrates ^{1/}	Calories ^{2/}
		%	%	%	%	%	Per 100 grams
	Dressed						
	Raw	(77.1)	19.4	1.8	1.7	0	94
			17.4-23.5	0.7-3.4	1.4-2.2		
			26	27	26		
Lizardfish	Muscle						
<u>Saurus lacerta</u>	Raw	75.4	21.1	0.2	1.6	8.7	121
Lizardfish	Whole						
<u>Synodus foetens</u>	Raw	76.0	18.7	1.3	4.3	0	87
		74.5-77.5	18.6-18.7	0.8-1.7	3.9-4.7		
		2	2	2	2		
Lizardfish, Spotted Tail	Muscle						
<u>Saurida undosquamis</u>	Raw	(68.1)	19.2	1.0	1.7	0	86
			17.3-21.0	0.8-1.1	1.6-1.7		
			2	2	2		
Lizardfish	Muscle						
Synodontidae	Raw	78.2	19.5	1.1	1.4	0	88
		77.7-79.2	19.0-20.3	0.5-1.5	1.2-1.5		
		4	4	4	3		
	Dried	20.6	62.5	6.3	10.6	0	307
Loach, Weatherfish	Muscle						
<u>Misgurnus anguillicaudatus</u>	Raw	78.9	15.7	2.3	2.6	0.5	86
		77.8-79.9	15.0-16.4	1.8-2.7	2.4-2.8		
		2	2	2	2		
Loach	Muscle						
Cobitidae	Raw	76.0	19.3	1.9	2.5	0.3	96
Longaray	Muscle						
<u>Ambassidae</u>	Raw	79.3	19.5	0.4	1.2	0	82
Lookdown	Muscle						
<u>Selene vomer</u>	Raw	75.4	20.7	1.8	2.7	0	99
Lumpfish	Muscle						
Cyclopteridae	Raw	85.4	7.7	5.7	0.8	0.4	84
		85.4-85.4	6.3-9.1	3.7-7.6	0.7-0.8		
		2	2	2	2		
	Roe						
	Raw	79.5	13.6	3.6	0.9	2.4	96
Maasbanker, Mackerel, Jack	Muscle						
<u>Trachurus trachurus</u>	Raw	76.0	19.5	2.5	1.6	0.4	102
		72.0-79.4	16.7-20.9	0.2-5.2	1.2-2.7		
		11	11	11	10		
	Canned	67.0	23.2	3.8	3.5	2.5	137
	Dried	25.3	49.1	6.9	8.4	10.3	300
		12.5-38.0	46.0-52.1				
		2	2				
	Whole						
	Raw	76.6	16.2	3.5	3.8	0	96
		73.0-80.5	12.8-17.6	1.4-6.1	3.3-4.4		
		4	5	5	5		
	Fishmeal	1.0	80.5	8.8	9.4	0.3	402
Mackerel	Muscle						
<u>Scomber microlepidotus</u>	Raw	75.4	18.6	1.5	1.4	5.1	108
		73.9-77.7	13.5-22.8	0.9-2.0	1.1-1.7		
		3	3	2	2		

Table 1.--Proximate composition of finfishes, whales, and products.

Common and Scientific Name	Description	Moisture	Protein	Fat	Ash	Carbo- hydrates ^{1/}	Calories ^{2/}
		%	%	%	%	%	Per 100 grams
Mackerel, Atlantic <u>Scomber scombrus</u>	Muscle Raw	61.6	19.6	9.6	1.5	8.2	198
		57.0-78.6 19	15.1-24.1 21	0.7-24.0 37	0.9-2.5 16		
	Dark Meat	59.7	18.6	11.8 8.7-18.3 7	1.0	8.9	216
	Canned	65.9	18.1	13.5	3.0	0	206
		62.9-74.0 4	17.0-19.4 4	3.3-18.6 4	2.7-3.2 4		
	Cooked Fish Loaf	61.9	21.6	13.4	0.3	2.8	218
	Offal Raw	64.3 61.6-65.2 3	14.7 13.3-15.7 3	17.7 15.5-19.4 3	3.5 3.1-3.9 3	0	218
Mackerel, Frigate <u>Auxis tapenosoma</u>	Muscle Raw	73.0	23.2	1.9	1.4	0.5	112
		72.3-73.7 3	21.5-24.8 4	0.7-3.1 3			
Mackerel, Frigate <u>Auxis thazard</u>	Muscle Raw	71.5	23.0	2.4	1.5	1.6	120
		70.2-72.7 4	18.5-25.8 4	1.3-4.1 4	1.3-1.7 4		
	Fully Dried	16.6	76.1	4.5	3.1	0	345
	Half Dried	68.2	22.8	2.3	6.0	0.7	115
Mackerel, Horse <u>Caranx luteus</u>	Muscle Raw	73.0	21.1	4.4	1.4	0	124
Mackerel, Horse <u>Caranx melampygus</u>	Muscle Raw	76.9	21.2	1.6	1.3	0	99
Mackerel, Horse <u>Caranx ronchus</u>	Muscle Raw	77.1	19.3	1.8	2.5	0	93
		76.9-77.2 2	19.0-19.5 2		2.3-2.7 2		
Mackerel, Horse <u>Trachurus capensis</u>	Muscle Salted & Dried	14.0	60.9	5.4	25.4	0	292
Mackerel, Horse Carangidae	Muscle Canned	71.1	21.4	6.2	1.4	0	141
		69.4-72.7 2	21.3-21.5 2	4.1-8.2 2	1.1-1.7 2		
	Salted & Dried	38.0	35.3	1.8	(24.8)	0	157
Mackerel, Indian <u>Rastrelliger neglectus</u>	Muscle Raw	72.0	20.7	6.5	1.7	0	141
Mackerel, Jack <u>Trachurus japonicus</u>	Muscle Raw	77.6	19.1	1.8	1.2	0.3	94
		75.6-79.5 4	18.1-20.0 4	0.9-3.2 3			
	Canned Dried	67.0	23.2	3.8	3.6	2.4	137
		34.4	50.0	6.3	9.3	0	257
		30.1-38.7 2	46.0-54.0 2	5.6-6.9 2	8.4-10.1 2		
Mackerel, King <u>Scomberomorus cavalla</u>	Muscle Raw	72.7	23.0	4.6	1.3	0	133

Table 1.--Proximate composition of finfishes, whales, and products.

Common and Scientific Name	Description	Moisture	Protein	Fat	Ash	Carbo- hydrates ^{1/}	Calories ^{2/} Per 100 grams
		%	%	%	%	%	
Mackerel, King, Seer <u>Scomberomorus commersonii</u>	Muscle Raw	75.6	18.9	1.4	1.5	2.6	99
		63.0-82.1	15.9-25.0	0.2-4.9	1.3-1.6		
	Salted & Dried	9	9	8	8		
		46.9	34.8	4.0	14.6	0	175
		40.4-54.5	26.2-43.1	2.3-5.8	14.4-14.7		
		3	3	3	2		
Mackerel, King Scombridae	Muscle Raw	75.7	20.4	2.7	1.3	0	106
Mackerel, Long-Jawed <u>Rastrelliger canagurta</u>	Muscle Raw	76.6	18.8	2.5	1.4	0.7	100
		73.3-79.2	16.6-21.4	0.5-4.3	1.1-1.8		
	Dried	8	8	10	8		
		23.7	74.3	6.1	5.6	0	352
	Salted & Dried	29.8	55.4	11.1	14.5	0	322
		24.5-39.5	42.8-68.4	5.2-15.2	11.0-17.3		
		6	6	6	6		
Mackerel, Pacific Chub <u>Scomber japonicus/colias</u>	Muscle Raw	70.8	20.6	6.6	2.0	0	142
		61.5-78.4	15.8-25.3	0.3-15.9	1.1-8.2		
	Canned In Oil	29	24	26	20		
		62.1	24.8	14.0	0	0	225
	Unspecified	69.4	21.3	6.5	2.8	0	144
		66.4-72.3	18.7-24.0	2.7-10.0	2.4-3.5		
	Dried	5	5	5	5		
		16.5	72.4	7.4	3.7	0	356
	Salted	65.2	25.2	4.9	4.7	0	164
		52.1	20.9	16.1	(10.9)	0	229
	Salted & Dried						
	Whole Raw	69.7	21.3	1.1	8.2	0	95
Mackerel, Short-Bodied, Hasa Hasa <u>Rastrelliger brachysomus</u>	Muscle Raw	75.9	19.6	1.9	1.6	1.0	100
		75.1-76.7	17.2-20.9	0.7-4.1	1.1-2.2		
	Smoked	3	3	3	3		
		61.9	30.4	1.7	5.8	0.2	137
Mackerel, Spanish <u>Scomberomorus maculatus</u>	Muscle Raw	73.5	19.8	5.9	1.2	0	132
		65.6-78.3	17.6-21.5	0.6-14.4	0.9-1.5		
	Cooked Unspecified	8	8	8	9		
		68.9	23.7	6.5	1.4	0	153
	Offal Raw	67.4	16.0	12.4	3.6	0.6	178
Mackerel, Spotted Spanish <u>Scomberomorus guttatus</u>	Muscle Raw	70.7	21.2	7.7	1.5	0	154
		68.7-72.7	19.8-22.5	1.7-15.5	1.4-1.5		
		2	2	4	2		
Mackerel, West African, Spanish <u>Scomberomorus tritor</u>	Muscle Raw	73.6	19.8	4.8	1.7	0	122
		71.6-75.6	19.5-20.0	2.8-6.8	1.6-1.8		
	Dried	2	2	2	2		
		18.4	74.5	2.4	4.7	0	320

Table 1.--Proximate composition of finfishes, whales, and products.

Common and Scientific Name	Description	Moisture	Protein	Fat	Ash	Carbo- hydrates ^{1/}	Calories ^{2/}
		%	%	%	%	%	Per 100 grams
Mackerel <i>Scombridae</i>	Muscle						
	Raw	71.1	19.5	9.9	1.8	0	167
		63.1-80.6	16.4-25.3	0.1-17.7	1.2-3.1		
		30	26	30	22		
	Canned						
	In Oil	52.8	20.1	22.4	2.5	2.2	291
		43.3-58.3	17.2-25.4	14.1-28.5	1.2-4.1		
		4	4	4	4		
	In Tomato Sauce	66.1	16.9	13.7	2.2	1.1	195
	Marinated	70.6	20.8	4.6	2.5	1.5	131
	Unspecified	67.1	19.4	10.0	2.2	1.3	173
		64.3-74.3	18.5-21.4	5.4-20.2	1.3-3.5		
		7	7	12	7		
	Cooked						
	Broiled	65.3	22.8	12.7	1.5	0	206
		61.6-68.9	21.8-23.7	6.5-15.8	1.4-1.6		
		2	2	3	2		
	Fried	52.7	21.1	12.2	1.9	12.1	243
		47.8-57.5	20.0-22.1	11.3-13.0			
		2	2	2			
	Salad	68.6	11.9	14.3	1.8	3.4	190
	Dried	15.5	72.4	7.4	3.7	1.0	360
	Salted	62.7	23.5	7.2	4.7	1.9	166
		60.3-65.0	18.3-27.0	4.0-13.0	4.7-4.7		
		2	3	4	2		
	Salted & Dried	41.4	25.6	19.2	10.7	3.1	275
		37.7-43.4	17.3-42.0	5.2-26.4	2.5-14.2		
		4	4	4	4		
	Smoked	61.6	26.0	9.2	5.8	0	187
		61.1-62.1	21.5-30.4	1.7-15.2	5.8-5.8		
		2	2	3	2		
	Fishmeal	8.3	67.0	9.1	14.9	0.7	353
		7.0-9.7	58.6-75.3	7.9-10.7	8.8-21.0		
		3	2	3	2		
	FPC	6.8	89.9	1.2	2.4	0	370
		6.6-7.0	89.5-90.3	0.5-1.9	0.8-3.9		
		2	2	2	2		
Marlin, Black <i>Makaira indica</i>	Muscle						
	Raw	76.4	22.6	0.6	1.3	0	96
Marlin, Blue <i>Makaira nigricans</i>	Muscle						
	Raw	73.0	23.1	3.2	1.0	0	121
Marlin, Striped <i>Makaira audax</i>	Muscle						
	Raw	75.6	21.1	2.7	1.1	0	109
		74.0-77.2	21.0-21.2	0.3-5.0			
		2	2	2			
Menhaden, Atlantic <i>Brevoortia tyrannus</i>	Muscle						
	Canned	67.9	18.7	10.2	3.8	0	167
	Whole						
	Fishmeal	6.0	63.5	12.5	17.4	0.6	369
		3.1-7.6	62.1-66.3	11.1-13.8	16.8-18.3		
		3	3	2	3		
Menhaden, Gulf <i>Brevoortia patronus</i>	Whole						
	Raw	68.9	15.5	11.8	3.5	0.3	169
		63.3-76.7	14.6-17.7	2.1-17.8	3.4-3.7		
		4	4	4	4		

Table 1.--Proximate composition of finfishes, whales, and products.

Common and Scientific Name	Description	Moisture	Protein	Fat	Ash	Carbo- hydrates ^{1/}	Calories ^{2/}
		%	%	%	%	%	Per 100 grams
Menhaden	Whole						
Clupeidae	Raw	75.8	15.9	4.2	4.5	0	101
	Fishmeal	8.1	61.0	10.8	18.0	2.1	350
		3.3-10.6	51.1-66.8	4.4-17.0	15.2-20.8		
		14	16	12	14		
Milkfish	Muscle						
Chanos chanos	Raw	72.5	20.5	5.3	1.3	0.5	132
		71.2-73.8	19.2-21.4	3.5-6.2	1.1-1.5		
		6	6	6	6		
	Cooked						
	Roasted	64.9	30.3	3.8	1.6	0	155
	Dried	15.2	52.2	11.8	12.7	8.1	347
	Salted & Dried	13.0	45.0	14.0	28.0	0	306
	Smoked	61.9	28.7	7.7	2.0	1.7	191
		60.5-63.6	27.5-29.3	6.6-8.3	1.9-2.2		
		3	3	3	3		
	Roe						
	Salted	87.2	5.8	2.1	2.4	2.5	52
Minnow, Common	Muscle						
Zacco platypus	Raw	82.8	13.5	2.8	1.5	0	79
Minnow	Muscle						
Cyprinidae	Raw	81.2	15.9	1.0	1.4	0.5	75
Mojarra	Muscle						
Diapterus evermanni	Raw	78.3	18.6	1.2	1.4	0.5	87
Mojarra, Spotted	Muscle						
Gerres filamentosus	Raw	78.6	18.6	1.3	1.7	0	86
		78.4-78.9	17.7-19.6		1.2-2.2		
		3	3		3		
Mojarra	Muscle						
Gerreidae	Raw	76.2	21.2	1.2	1.4	0	96
Moonfish, Atlantic	Muscle						
Vomer setapinnis	Dried	38.3	35.8	7.3	18.7	0	209
		38.1-38.4	35.7-35.8				
		2	2				
Moonfish, Pacific	Muscle						
Vomer declivifrons	Raw	72.9	24.4	2.1	1.3	0	117
Mosquitofish	Whole						
Gambusia affinis	Raw	78.0	13.5	4.5	4.0	0	95
Mullet	Muscle						
Mugil oeur	Raw	69.9	19.1	7.8	1.1	2.1	155
Mullet, Bhargar	Muscle						
Mugil tade	Raw	78.4	16.4	0.6	1.4	3.2	84
		76.3-80.4	14.0-18.9		1.2-1.6		
		2	2		2		
Mullet, Black Fin	Muscle						
Mugil melinopterus	Raw	74.5	19.8	3.2	1.3	0	108
	Dried	43.5	32.0	5.3	16.0	3.2	189
Mullet, Ca'Doi	Muscle						
Mugil affinos	Raw	67.6	21.3	10.0	1.0	0	175

Table 1.--Proximate composition of finfishes, whales, and products.

Common and Scientific Name	Description	Moisture	Protein	Fat	Ash	Carbo- hydrates ^{1/}	Calories ^{2/}
		%	%	%	%	%	Per 100 grams
Mullet, Green-Backed <u>Mugil dussumieri</u>	Muscle Raw	72.3	20.5	3.6	1.8	1.8	121
	Muscle Dried	43.5	32.0	5.3	16.0	3.2	189
Mullet, Grey <u>Mugil auratus</u>	Muscle Raw	78.2	17.9	2.9	1.3	0	98
Mullet, Grey, Boi <u>Mugil speigleri</u>	Muscle Raw	73.0	17.8	0.5	1.0	7.7	107
Mullet, Grey Harder <u>Mugil capito</u>	Muscle Raw	71.6	21.2	6.2 5.3-7.1 2	1.3	0	141
Mullet, Indian <u>Mugil corsula</u>	Muscle Raw	77.2	17.7	0.7	1.1	3.3	90
	Muscle Dried	14.1	61.4	6.5	12.0	6.0	328
Mullet, Kechki <u>Mugil cascasia</u>	Muscle Raw	78.4 70.8-86.0 2	14.9 12.3-17.6 2	0.4	1.7	4.6	82
	Whole Dried	15.9	69.3	1.8	10.5	2.5	303
Mullet, Long-Finned <u>Mugil vaigiensis</u>	Muscle Raw	74.0 73.2-74.7 2	20.6 20.4-20.8 2	2.1 1.5-2.6 2	2.0 1.3-2.6 2	1.3	107
	Roe Raw	55.5	25.2	13.9	2.4	3.0	238
Mullet, Parsey <u>Mugil parsia</u>	Muscle Raw	70.8 69.3-72.3 2	17.5 16.6-18.4 2	4.6 3.0-5.9 3	1.5 0.9-2.1 2	5.9	135
	Muscle Raw	72.4 59.5-79.9 37	19.2 15.7-22.8 34	6.0 0.7-20.2 37	1.3 1.0-1.8 33	1.1	135
Mullet, Striped <u>Mugil cephalus</u>	Dressed Raw	63.7 58.5-72.7 8	16.9 15.5-19.2 7	14.6 3.4-22.4 8	3.9 3.5-4.6 7	0.9	203
	Offal Raw	60.6 50.2-72.0 6	16.8 14.5-18.4 5	15.2 1.2-26.7 6	6.6 5.0-8.6 5	0.8	207
Mullet Mugilidae	Muscle Raw	74.4 69.7-79.3 18	20.1 17.7-22.6 21	4.6 1.2-7.8 18	1.2 1.0-1.3 13	0	122
	Cooked Boiled & Steamed	71.1 69.1-72.7 3	22.7 21.4-25.0 3	4.3 4.0-4.5 3	1.4	0.5	132
	Fried In Oil	19.2 31.8	26.9 41.6	46.7 26.0	6.7 20.0	0.5 0	530 400
	Salted & Dried	19.0-44.5 2	40.7-42.5 2	4.1-11.0 2	12.4-27.5 2		

Table 1.--Proximate composition of finfishes, whales, and products.

Common and Scientific Name	Description	Moisture	Protein	Fat	Ash	Carbo- hydrate ^{1/}	Calories ^{2/}
		%	%	%	%	%	Per 100 grams
	Smoked	61.0 60.5-61.5 2	27.6 26.5-28.6 2	8.8 8.4-9.2 2	2.7 1.5-3.8 2	0	190
	Whole						
	Raw	75.5	15.7	5.1	3.6	0	109
	Dried	33.5	41.6	14.8	10.1	0	300
	Fishmeal	2.4	82.8	9.7	6.0	0	419
	Roe						
	Salted & Dried	23.0	40.0	26.0	6.4	4.6	412
Nemipterid, Long-Tailed <u>Nemipterus japonicus</u>	Muscle						
	Raw	78.8 78.2-79.4 3	17.8 17.2-18.3 4	1.0 0.3-1.5 4	2.1 1.3-3.4 4	0.3	81
Nemipterid, Ribbon-Finned <u>Nemipterus taenipterus</u>	Muscle						
	Raw	77.8 76.4-79.2 3	18.4 17.6-19.3 3	1.0 0.9-1.2 3	1.4 1.3-1.4 3	1.4	88
	Dried	40.6	34.6	2.9	18.7	3.2	177
Nemipterid, Roncador <u>Nemipterus virgatus</u>	Muscle						
	Raw	77.4 76.5-78.2 2	17.8	2.7	1.2	0.9	99
Nemipterid Nemipteridae	Muscle						
	Raw	78.4	17.7	1.9	1.9	0	88
Pandora, Sea Bream <u>Pagellus erythrinus</u>	Muscle						
	Raw	79.0 75.7-80.9 7	17.2 15.6-21.3 8	2.0 0.4-2.7 9	1.7 1.3-2.4 7	0	87
Parrotfish <u>Oplegnathus fasciata</u>	Muscle						
	Raw	79.2 78.6-79.8 2	17.1 16.1-18.0 2	2.7 2.3-3.1 2	1.3 1.1-1.5 2	0	79
Parrotfish <u>Scarus mechipunctatus</u>	Muscle						
	Raw	79.7 79.2-80.2 2	19.2	0.4	1.1	0	80
Parrotfish, Loro <u>Sparisoma squalidum</u>	Muscle						
	Raw	80.0	18.9	0.4	1.4	0	79
Parrotfish Scaridae	Muscle						
	Raw	75.1 74.4-75.8 2	20.5 20.0-21.0 2	2.0	1.5	0.9	104
Perch, Blue, Walleye <u>Stizostedion vitreum glaucus</u>	Muscle						
	Raw	79.8 79.6-79.9 2	18.9 18.6-19.1 3	1.1 0.9-1.5 3	1.2 1.1-1.2 3	0	86
	Offal						
	Raw	69.6 66.8-71.2 4	16.9 15.9-17.8 4	8.8 7.5-10.7 4	6.0 5.1-7.0 4	0	147

Table 1.--Proximate composition of finfishes, whales, and products.

Common and Scientific Name	Description	Moisture	Protein	Fat	Ash	Carbo- hydrates ^{1/}	Calories ^{2/}
		%	%	%	%	%	Per 100 grams
Perch, Climbing <u>Anabas testudenicus</u>	Muscle	75.2	18.1	4.5	1.5	0.7	116
	Raw	70.0-78.6 8	14.8-20.1 9	1.6-8.8 5	0.9-2.0 6		
	Whole	71.0	14.6	8.8	(5.6)	0	138
	Raw						
Perch, Climbing, Gourami <u>Trichogaster fasciata</u>	Muscle	75.0	16.1	3.9	1.9	3.1	112
	Raw						
Perch, Climbing, Gourami <u>Trichogaster pectoralis</u>	Muscle	78.9	18.0	0.8	1.1	1.2	80
	Raw	76.9-80.9 2	17.2-18.8 2				
Perch, Climbing, Gourami <u>Trichogaster trichopterus</u>	Muscle	76.3	19.3	0.3	1.0	3.1	92
	Raw	74.4-78.3 2	18.8-19.8 2				
	Dried	38.3	34.1	9.4	16.3	18.2	294
		28.5-48.0 2	29.6-38.5 2	4.6-14.2 2			
Perch, Climbing Anabantidae	Muscle	76.0	17.7	4.6	1.2	0.5	114
	Raw	70.0-81.5 6	14.6-20.4 7	2.0-7.1 2	1.0-1.6 3		
	Dried	48.0	29.6	4.6	16.4	1.4	165
Perch, Golden, Callop <u>Plectroplites ambiguus</u>	Muscle	78.2	18.0	2.1	1.4	0.3	91
	Raw						
Perch, Ocean, Pacific <u>Sebastes alutus</u>	Muscle	79.1	18.5	1.4	1.2	0	91
	Raw	78.4-79.8 5	17.2-19.2 6	1.2-1.5 5	1.0-1.3 6		
	Offal	70.4	16.3	7.8	6.5	0	135
	Raw						
Perch, Sand <u>Psammoperca waigiensis</u>	Muscle	77.2	20.8	0.7	1.3	0	90
	Raw						
Perch, Silver <u>Bairdella chrysura</u>	Whole	75.5	16.9	3.2	4.6	0	96
	Raw	74.8-76.9 4	16.4-17.2 4	2.2-3.9 4	4.0-5.7 4		
Perch, Yellow <u>Perca flavescens</u>	Muscle	78.9	18.8	1.1	1.2	0	85
	Raw	75.5-81.1 14	17.3-20.0 15	0.5-4.0 16	1.1-1.4 11		
	Whole	74.5	16.6	4.4	4.3	0.2	107
	Raw	71.7-76.3 5	15.8-17.5 5	2.5-7.5 5	3.7-5.3 5		
	Offal	70.5	17.0	7.6	6.4	0	136
	Raw	68.5-74.3 3	16.3-17.7 3	5.0-9.2 3	4.5-7.5 3		
Perch Percidae	Muscle	82.6	14.9	0.7	1.0	0.8	69
	Raw			0.6-0.8 3			

Table 1.--Proximate composition of finfishes, whales, and products.

Common and Scientific Name	Description	Moisture %	Protein %	Fat %	Ash %	Carbo- hydrates ^{1/} %	Calories ^{2/} Per 100 grams
	Whole FPC	7.5	78.7	7.8	6.6	0	385
Picarel <u>Maena zebra</u>	Muscle Raw	75.4	19.8	1.4	1.4	2.0	100
	Dressed Raw	79.0	16.2	0.9	2.5	1.4	76
Picarel <u>Smaris vulgaris</u>	Muscle Raw	67.7 64.6-70.8 2	28.1 24.9-31.2 2	3.3	2.0 2.0-2.1 2	0	142
Picarel Centracantidae	Muscle Raw	76.1 72.5-79.7 2	18.6	0.3	1.4	3.6	92
Pigfish, Grunt <u>Orthopristis chrysoptera</u>	Whole Raw	74.3	16.7	5.1	4.1	0	113
Pike <u>Hepsetus odoe</u>	Muscle Raw	79.2	18.8	0.7	1.3	0	82
	Dried & Smoked	11.2	80.2	4.2	4.4	0	359
Pike, Muskellunge <u>Esox masquinongy</u>	Muscle Raw	76.3	20.2	2.5	1.6	0	103
Pike, Northern <u>Esox lucius</u>	Muscle Raw	79.7 78.5-80.2 4	18.7 18.2-19.7 4	0.9 0.5-1.2 4	1.2 1.1-1.3 2	0	93
	Offal Raw	71.8	16.5	5.3	4.7	1.7	114
Pike Esocidae	Muscle Raw	78.9 76.7-80.8 5	18.3 17.9-18.7 3	0.7 0.5-0.9 5	1.2 1.1-1.3 4	0.9	83
Pilchard, Australian <u>Sardinops neopilchardus</u>	Whole Raw	77.1 75.9-78.9 6	16.3 14.8-17.5 6	1.0 0.3-1.2 6	4.5 4.3-4.9 6	1.1	79
Pilchard, European <u>Clupea pilchardus</u>	Muscle Raw	71.7 59.6-81.8 27	19.5 14.4-25.4 29	5.9 1.5-17.4 29	2.3 1.0-6.7 28	0.6	134
	Canned In Oil	54.8 54.0-55.5 2	21.7 20.0-25.0 3	22.6 13.5-32.7 3	3.5	0.9	294
	Whole Fishmeal	2.2	65.2	26.9	5.5	0.2	504
Pilchard, Japanese <u>Sardinops melanosticta</u>	Muscle Raw	72.3 69.0-76.6 8	18.2 16.2-21.1 6	6.3 0.7-11.0 8	2.3 1.2-5.4 6	0.9	133
	Canned In Oil	54.8	21.7	20.0	3.2	0.3	268
	In Tomato	68.0	22.2	5.4	2.9	1.5	143

Table 1.--Proximate composition of finfishes, whales, and products.

Common and Scientific Name	Description	Moisture	Protein	Fat	Ash	Carbo- hydrates ^{1/}	Calories ^{2/}
		%	%	%	%	%	Per 100 grams
Pilchard, Pacific <u>Sardinops (Sardina) caerulea</u>	Unspecified	69.0	18.5	6.1	3.9	2.5	108
		64.5-72.4	15.5-20.6	4.8-7.7	3.5-4.3		
	Salted	3	3	3	2		
		63.8	23.3	5.7	7.2	0	116
	Salted & Dried	40.7	40.0	6.7	12.8	0	220
		29.0-52.4	25.8-54.1	3.3-10.0			
	Whole	2	2	2			
		30.3	55.2	10.4	12.8	0	314
	Dried	18.2-42.4		6.9-13.8			
		2		2			
Pilchard <u>Clupeidae</u>	Muscle	67.4	19.2	12.1	3.1	0	186
		63.4-76.2	18.1-22.6	3.1-15.6			
	Canned	7	8	8			
		65.8	18.5	12.3	2.7	0.7	188
	In Tomato Sauce	64.6-67.4	17.8-19.7	10.4-14.8	2.6-2.8		
		4	5	5	5		
	Unspecified	61.9	16.8	17.9	1.7	1.7	228
		56.1-65.2	15.9-17.7	13.7-26.2	1.1-2.9		
Pilchard <u>Clupeidae</u>	Muscle	7	7	6	7		
		64.8	17.6	13.9	1.8	1.9	70
	Canned	60.7-68.2	15.8-21.9	10.8-14.9	1.6-1.9		
		3	4	4	2		
	Whole	7.1	65.7	3.6	16.5	7.0	295
		5.9-8.3	61.9-68.3	3.5-3.7	12.8-20.9		
Pintadilla <u>Cheilodactylus variegatus</u>	Muscle	2	3	2	3		
		74.8	19.1	1.8	1.4	2.9	104
Plaice, American <u>Hippoglossoides platessoides</u>	Muscle	81.6	15.9	0.8	1.2	0.5	73
		77.5-85.5	13.1-18.1	0.1-4.8			
	Raw	11	10	10			
		75.5	16.5	2.5	5.1	0.6	91
	Offal	74.7-76.3	15.7-17.2	2.2-2.8	4.7-5.5		
		2	2	2	2		
Plaice, American <u>Pleuronectes platessa</u>	Muscle	80.0	17.2	1.5	1.3	0	82
		79.1-80.0	16.8-17.7	0.3-2.3			
	Raw	2	3	5			
		78.3	15.9	3.2	(2.6)	0	92
	Whole	76.8-79.9	14.8-17.3	0.9-5.4			
		2	3	2			
Plaice, Solla <u>Platessa platessa</u>	Muscle	78.0	17.3	2.6	2.0	0	93
Plaice <u>Pleuronectidae</u>	Muscle	80.1	15.9	1.6	1.4	1.0	82
		79.2-81.0	15.3-16.4	1.4-1.8	1.2-1.6		
	Raw	4	4	2	2		
		58.5	18.0	14.4	(2.1)	0	202
	Cooked	78.0	18.1	1.9	(2.0)	0	90

Table 1.--Proximate composition of finfishes, whales, and products.

Common and Scientific Name	Description	Moisture	Protein	Fat	Ash	Carbo- hydrates ^{1/}	Calories ^{2/}
		%	%	%	%	%	Per 100 grams
Pollock <u>Pollachius pollachius</u>	Whole Raw	76.2	18.4	1.4	4.6	0	86
	Muscle Raw	78.7 77.4-80.3 5	18.4 17.5-19.2 6	0.4 0.3-0.7 6	1.6 1.3-2.0 5	0.9	81
	Muscle Raw	78.9 72.9-82.1 7	19.2 17.0-24.3 11	0.8 0.2-2.0 9	1.4 1.2-1.9 5	0	84
Pollock, Saithe, Coalfish <u>Pollachius virens</u>	Canned Cooked	72.9	24.3	1.5	1.9	0	111
	Riceloaf	74.0	12.7	2.2	2.5	8.6	105
	Steamed	74.8	22.6	0.6	(2.0)	0	96
	Offal Raw	70.7 70.1-71.3 3	16.5 16.1-17.0 3	8.1 6.6-9.6 3	3.7 3.4-4.0 3	1.0	143
	Muscle Raw	81.2 80.3-83.0 15	16.7 14.7-18.9 17	0.8 0.2-1.0 17	1.1 1.0-1.3 15	0	74
	Dried Salted & Dried	16.3 34.3	65.5 56.0	3.2 2.0	7.5 7.7	7.5 0	321 242
Pollock, Walleye <u>Theragra chalcogramma</u>	Whole Raw	79.3 79.1-79.6 3	16.0 15.3-17.2 3	2.4 1.2-3.0 3	3.4 3.3-3.5 3	0	86
	Fishmeal	11.9	53.8	7.5	23.8	3.0	295
	Offal Raw	79.7	15.7 14.1-17.2 2	1.8 1.0-2.6 2	4.3	0	79
	Roe Raw	66.4 65.1-67.6 2	25.3 24.2-26.4 2	2.0 1.9-2.1 2	4.3 2.2-6.4 2	2.0	127
	Muscle Raw	78.7 75.9-80.4 6	19.7 16.3-21.7 5	1.3 0.8-2.5 5	1.5 1.1-1.8 5	0	91
	Cooked Cakes Creamed Fried Almond Sauce Battered & Breaded Loaf Salad Shortcake	58.5 74.7 71.9 67.5 69.8 69.2 67.1	11.9 13.9 18.5 16.5 15.2 15.5 12.8	16.8 5.9 5.9 6.9 4.1 10.9 5.1	2.5 1.5 2.3 (1.5) 2.3 2.3 2.3	10.3 4.0 1.4 (7.6) 8.6 2.1 12.7	240 125 133 158 132 169 148
Pollock Gadidae	Roe Raw	68.9 64.0-73.8 2	24.9	1.0	8.0	0	109
	Muscle Raw	77.3 73.7-78.9 4	19.7 18.4-20.5 4	0.8 0.3-1.9 4	1.2 1.1-1.3 4	0	86
	FPC	1.2	93.7	2.4	3.0	0	396
Pomfret, Atlantic <u>Brama brama</u>	Muscle Raw	77.3 73.7-78.9 4	19.7 18.4-20.5 4	0.8 0.3-1.9 4	1.2 1.1-1.3 4	0	86
	FPC	1.2	93.7	2.4	3.0	0	396

Table 1.--Proximate composition of finfishes, whales, and products.

Common and Scientific Name	Description	Moisture	Protein	Fat	Ash	Carbo- hydrates ^{1/}	Calories ^{2/}
		%	%	%	%	%	Per 100 grams
Pomfret, Silver <u>Pampus argenteus</u>	Muscle Raw	75.7 69.3-81.0 3	19.2 15.1-25.6 3	3.8 1.0-5.2 4	1.1 0.7-1.5 3	0.2	112
Pomfret, Silver <u>Pampus chinensis</u>	Muscle Raw	76.0	20.9	1.6	1.1	0.4	100
Pomfret Bramidae	Muscle FPC	8.4	84.4	0.6	8.1	0	343
Pompano <u>Caranx ignobilis</u>	Muscle Raw	74.6 72.9-76.3 2	21.1 19.9-22.2 2	3.3 0.9-5.6 2	(1.0)	0	114
Pompano <u>Caranx stellatus</u>	Muscle Raw	75.9 74.3-77.4 3	20.9 20.2-21.5 3	1.6 0.6-3.4 3	1.2	0.4	100
Pompano <u>Trachinotus palometus</u>	Muscle Raw	77.4	20.5	0.8	1.2	1.1	94
Pompano, Indian <u>Alectis indicus</u>	Muscle Raw	77.0 77.7-80.4 7	20.2 17.6-21.6 7	0.9 0.2-1.7 7	1.3 0.4-1.5 7	0.6	91
Pompano, Pacific <u>Neptomenus crassus</u>	Muscle Raw	76.1 73.1-78.3 3	19.1 17.2-20.2 3	2.0 0.7-3.3 2	1.3 1.0-1.5 2	1.5	100
Pompano, Talakitok <u>Caranx malabaricus</u>	Muscle Raw	75.8 73.3-76.9 4	17.2 16.3-18.5 4	2.5 1.1-6.3 4	1.5 1.2-1.7 4	3.0	103
Pompano Carangidae	Muscle Raw	74.6 72.5-76.5 5	19.5 18.7-21.0 5	4.1 0.9-7.9 5	1.2 0.9-1.5 5	0.6	115
	Dried	7.1	77.7	7.5	7.7	0	378
Porgy, Aligote <u>Pagellus acarne</u>	Muscle Raw	77.1 73.6-80.5 2	18.0 16.8-19.2 2	2.2 1.1-3.3 2	1.3 1.2-1.3 2	1.4	97
Porgy, Bisugo <u>Pagellus cantabricus</u>	Muscle Raw	79.3 77.8-80.3 5	17.0 16.4-17.4 5	2.3 1.1-4.4 5	1.4 1.1-1.6 5	0	89
Porgy, Bogue <u>Sarpa (Box) boops</u>	Muscle Raw	69.3	18.6	10.1	2.1	0	165
Porgy, Large Eyed Dentex <u>Dentex macrophthalmus</u>	Muscle Salted & Dried	28.0	60.6	4.9	21.9	0	287
Porgy, Longspine <u>Stenotomus caprinus</u>	Whole Raw	73.3 73.3-73.4 3	17.5 17.2-17.6 3	2.4 1.9-2.6 3	6.7 6.4-7.4 3	0	92
Porgy, Panga <u>Pagrus lanarius</u>	Muscle Raw	77.0	20.4	0.6	1.3	0.7	90

Table 1.--Proximate composition of finfishes, whales, and products.

Common and Scientific Name	Description	Moisture	Protein	Fat	Ash	Carbo- hydrates ^{1/}	Calories ^{2/}
		%	%	%	%	%	Per 100 grams
Porgy, Pargo <u>Pagrus ehrenbergii</u>	Muscle						
	Raw	76.9	20.5	2.2	1.8	0	102
	Salted & Dried	10.5	62.6	4.0	31.0	0	285
Porgy, Redfin <u>Argyrops spinifer</u>	Muscle						
	Raw	77.2	19.8	0.8	1.4	0.8	90
Porgy, Red Roman <u>Pagrus laticeps</u>	Muscle						
	Raw	77.5	19.9	0.8	1.5	0.3	88
Porgy Sparidae	Muscle						
	Raw	77.6 69.4-83.0 22	18.3 13.2-24.5 18	3.2 0.6-7.0 24	1.4 1.1-1.6 16	0	92
	Cooked						
	Steamed	75.0 73.5-76.5 2	18.8 17.8-19.7 2	3.5 3.0-4.0 2	(2.7)	0	107
	Dried	23.4	64.0	4.9	7.7	0	300
	Roe						
	Raw	76.3 75.7-76.9 2	16.0 13.6-18.3 2	5.8 4.3-7.3 2	1.5 1.4-1.6 2	0.4	118
	Salted	60.9	21.6	2.2	14.8	0.5	102
Pout, Fanica <u>Gadus luscus</u>	Muscle						
	Raw	78.6 75.5-80.1 4	18.9 17.7-21.4 4	0.8 0.6-1.0 4	1.7 1.4-2.1 4	0	83
Puffer, Swellfish <u>Sphoeroides maculatus</u>	Muscle						
	Cooked						
	Boiled	74.2	23.2	0.7	1.0	0.9	103
Puffer, Swellfish <u>Sphoeroides porphyreus</u>	Muscle						
	Raw	79.7	18.6	0.4	1.4	0	78
Puffer, Swellfish Tetraodontidae	Muscle						
	Raw	78.9 78.3-80.1 6	19.1 16.2-20.2 5	1.3 0.1-2.5 7	0.7 0.8-1.6 5	0	88
	Salted & Dried	17.3	64.3	1.0	18.8	0	266
Puntazzo <u>Puntazzo puntazzo</u>	Muscle						
	Raw	77.9	17.3	3.9	1.4	0	104
Queenfish, Leatherjacket <u>Chorinemus tol</u>	Muscle						
	Raw	76.6 72.7-78.6 5	20.2 19.1-21.2 5	1.1 0.1-2.4 4	1.7 1.5-2.4 5	0.4	94
Rabbitfish <u>Siganus (Teuthis) javis</u>	Muscle						
	Raw	78.2 74.4-80.1 5	19.2 17.4-20.9 5	1.5 0.6-3.8 5	1.0 0.3-1.4 5	0	90
	Dried	42.7	38.2	1.8	14.9	2.4	179
	Salted & Fermented	60.0	10.6	1.7	22.8	4.9	77
Rabbitfish, Spiny <u>Siganus oramin</u>	Muscle						
	Raw	78.4	18.9	0.5	2.2	0	80
Rabbitfish Siganidae	Muscle						
	Raw	76.8	21.0	0.7	1.5	0	90

Table 1.--Proximate composition of finfishes, whales, and products.

Common and Scientific Name	Description	Moisture	Protein	Fat	Ash	Carbo- hydrates ^{1/}	Calories ^{2/}
		%	%	%	%	%	Per 100 grams
Ratfish <u>Chimaera monstrosa</u>	Muscle Raw	81.6	12.3	0.7	1.1	4.3	73
Ratfish <u>Hydrolagus colliei</u>	Muscle Raw	76.1 69.6-83.4 3	14.9 11.6-18.1 3	9.8 0.7-18.1 3	1.4 1.2-1.6 2	0	148
Ray, Eagle <u>Actobatus peruvianus</u>	Muscle Raw Cooked Baked	75.6 65.9	21.0 31.1	0.9 0.4	2.0 1.4	0.5 1.2	94 133
Ray, Eagle <u>Rhinoptera seweli</u>	Muscle Raw	73.6	20.9	0.5	1.2	3.8	103
Ray, Electric <u>Torpedo (ocellata) torpedo</u>	Muscle Raw	77.3 75.6-79.1 2	16.3 12.1-20.5 2	0.8 0.4-1.2 2	1.6 1.1-2.0 2	0.4	74
Razorfish, Shrimpfish <u>Aeoliscus punctulatus</u>	Muscle Dried & Smoked	10.0	81.2	5.6	3.2	0	375
Redfish <u>Sebastes mentella</u>	Muscle Raw	75.8 74.2-78.2 8	18.5 16.8-19.7 9	4.8 3.3-7.1 8	1.1 1.0-1.5 8	0	117
	Whole Fishmeal	6.0	73.0 57.0-85.0 5	5.7 0.9-11.7 5	18.5 16.1-23.0 5	0	343
Redfish, Ocean Perch <u>Sebastes marinus</u>	Muscle Raw	77.7 72.6-80.5 16	18.4 17.4-21.7 16	3.1 0.6-8.4 18	1.2 0.8-1.5 14	0	102
	Cooked Baked In Spanish Sauce Unspecified Chowder Fried	78.7 69.3 77.9 59.0	14.5 24.0 10.1 18.9	3.4 5.1 4.9 11.5	1.5 1.8 1.7 1.9	1.9 0 5.4 8.7	96 142 106 214
	Kabobs Kabobs & Mushrooms Molded	70.0 76.8 75.1	21.4 13.7 10.8	5.8 5.2 6.1	2.3 2.2 1.9	0.5 2.1 6.1	140 110 123
	Whole Raw	75.4 74.4-76.4 2	17.3 17.1-17.4 2	2.2 2.0-2.3 2	6.0 5.4-6.6 2	0	89
	Fishmeal	3.6 1.2-6.0 2	58.6 57.1-60.0 2	10.6 8.1-13.0 2	25.3 25.3-25.4 2	1.9	337
	Offal Raw	70.0 67.4-73.6 4	16.3 15.9-17.0 4	6.8 4.0-8.5 4	6.5 6.3-6.7 4	0.4	128
Roach <u>Rutilus rutilus</u>	Muscle Raw	77.9	15.6	3.7 1.9-5.4 2	(2.8)	0	116

Table 1.--Proximate composition of finfishes, whales, and products.

Common and Scientific Name	Description	Moisture	Protein	Fat	Ash	Carbo- hydrates ^{1/}	Calories ^{2/}
		%	%	%	%	%	Per 100 grams
	Whole Fishmeal Defatted	11.5 11.4-11.6 2	73.2 67.1-79.4 2	7.7 2.0-13.4 2	(7.5)	0	262
Roach <i>Cyprinidae</i>	Muscle Raw	80.5	16.4	1.1	1.2	0.8	79
Rockfish, Black <i>Sebastes melanops</i>	Muscle Raw	81.0	17.9 17.5-18.7 3	1.3 1.0-1.8 3	1.3 1.2-1.3 2	0	83
Rockfish, Boccaccio <i>Sebastes paucispinus</i>	Muscle Raw	79.5 78.5-80.0 3	18.9 18.6-19.5 3	1.5 1.0-2.5 3	1.2 1.2-1.3 3	0	89
Rockfish, Canary <i>Sebastes pinniger</i>	Muscle Raw	79.3 78.7-79.6 5	18.4 17.2-18.8 6	2.3 0.4-6.0 6	1.3 1.2-1.6 4	0	94
Rockfish, Chilipepper <i>Sebastes goodei</i>	Muscle Raw	76.6	20.8	2.4	1.1	0	105
Rockfish, Dark Blotched <i>Sebastes crameri</i>	Muscle Raw	77.4	19.8	2.2	1.2	0	99
Rockfish, Flag <i>Sebastes rubivinctus</i>	Muscle Raw	78.9	18.2	1.8	1.1	0	89
Rockfish, Greenstriped <i>Sebastes elongatus</i>	Muscle Raw	78.8 78.5-79.1 2	20.2 20.0-20.3 2	0.7 0.7-0.7 2	1.2 1.0-1.3 2	0	87
Rockfish, Idiot <i>Sebastes alascanus</i>	Muscle Raw	80.7	17.3	1.7	1.1	0	85
Rockfish, Mebara <i>Sebastes inermis</i>	Muscle Raw	75.8 75.1-77.4 3	21.0	1.6	1.4	0	98
Rockfish, Osaga <i>Sebastes iracundus</i>	Muscle Raw	77.5	18.3	3.9	1.7	0	108
Rockfish, Red <i>Sebastes matsubarae</i>	Muscle Raw	76.3	17.4 16.4-18.4 2	3.4 0.8-6.0 2	1.3	1.6	107
Rockfish, Red <i>Sebastes ruberrimus</i>	Muscle Raw	79.8	17.6 17.2-17.9 2	0.2	1.2 1.0-1.3 3	1.2	77
Rockfish, Rosy <i>Sebastes rosaceus</i>	Muscle Raw	79.1	19.3	0.8	1.1	0	84
Rockfish, Rougheye <i>Sebastes aleutianus</i>	Muscle Raw	79.6	19.3	1.3	1.6	0	89
Rockfish, Yellowtail <i>Sebastes flavidus</i>	Muscle Raw	79.4	18.9	1.6	1.2 1.1-1.2 3	0	90

Table 1.--Proximate composition of finfishes, whales, and products.

Common and Scientific Name	Description	Moisture %	Protein %	Fat %	Ash %	Carbo- hydrates ^{1/} %	Calories ^{2/} Per 100 grams
Rockfish <i>Scorpaenidae</i>	Muscle						
	Raw	80.8 75.9-86.7 3	16.2 12.5-19.8 4	1.0 0.5-1.4 3	1.2 0.7-1.5 3	0.8	76
	Cooked						
	Baked & Stuffed	70.1	21.3	3.4	1.6	3.6	116
	Cocktail	74.6	15.9	0.9	2.4	6.2	96
	Steamed	75.4	18.1	2.5	2.1	1.9	102
	Offal						
Runner, Blue <i>Caranx crysos</i>	Raw	72.0 71.3-73.4 2	16.5 16.2-16.8 2	6.4 5.7-7.1 2	5.4 4.8-6.0 2	0	124
	Muscle						
	Raw	75.2 73.7-76.6 2	21.5 20.8-22.2 2	2.2 1.2-3.1 2	1.5 1.4-1.6 2	0	96
	Whole	35.7	40.0	3.7	19.6	1.0	197
	Dried	34.6-36.7 2					
	Muscle						
	Raw	75.2 72.9-78.6 5	21.7 19.5-23.6 5	1.5 0.6-3.0 5	1.5 1.2-1.9 5	0	100
Sablefish <i>Anoplopoma fimbria</i>	Muscle						
	Raw	71.5	12.9	15.2	1.0	0	188
	Offal						
Sailfish <i>Istiophorus platypterus</i>	Raw	71.0 61.7-80.1 5	12.9 10.8-17.8 8	14.7 0.4-25.0 7	1.2 0.8-2.4 5	0.2	185
	Muscle						
	Raw	75.1 72.4-79.8 4	20.4 13.5-23.8 5	2.1 0.8-3.6 5	1.0 0.6-1.3 4	1.4	101
Salmon, Atlantic <i>Salmo salar</i>	Muscle						
	Raw	74.5 66.6-84.8 9	17.2 11.7-22.5 8	5.5 0.2-14.5 14	1.1 1.0-1.2 6	1.7	125
	Canned	65.2 64.3-68.0 4	21.1 20.8-21.1 4	11.6 9.0-12.5 4	1.2	0.9	192
	Whole						
Salmon, Australian <i>Arripis trutta</i>	Raw	72.5	20.7	2.8	4.3	0	108
	Dressed						
	Raw	68.8 67.3-70.0 3	20.9 20.3-21.4 3	5.8 5.3-6.6 3	3.9 3.7-4.0 3	0.6	138
Salmon, Cherry <i>Oncorhynchus masou</i>	Muscle						
	Raw	74.5 73.0-75.9 2	20.5	3.8 2.4-5.4 4	1.4	3.6	131
	Canned	84.5	10.0	4.6	1.4	0	81
	Salted	68.4	22.7	5.9	3.1	0	144
Salmon, Chinook <i>Oncorhynchus tshawytscha</i>	Muscle						
	Raw	68.0 61.3-79.9 16	17.9 14.1-25.6 21	11.6 2.2-19.0 19	1.0 0.8-1.3 13	1.5	182

Table 1.--Proximate composition of finfishes, whales, and products.

Common and Scientific Name	Description	Moiature	Protein	Fat	Ash	Carbo- hydrates ^{1/}	Calories ^{2/}
		%	%	%	%	%	Per 100 grams
Salmon, Chum <u>Oncorhynchus keta</u>	Canned	62.8	19.3	14.8	1.5	1.6	217
		55.6-68.9 20	17.6-20.3 20	3.7-24.1 23	1.0-2.6 20		
	Cooked Fishloaf	61.9	24.9	10.8	0.2	2.2	206
	Muscle Raw	73.5	20.4	4.6	1.4	0	123
		68.9-78.3 11	17.7-24.5 15	1.3-7.9 18	1.2-1.7 9		
	Canned	68.9	20.8	6.6	1.5	1.3	148
		63.7-71.4 10	18.9-21.5 11	5.2-15.2 13	1.0-2.6 10		
	Whole Raw	81.7	14.8	0.8	(2.3)	0	66
	Roe Raw	57.5	18.4	12.4	1.6	10.1	226
		54.5-60.9 3		10.2-17.0 4	1.4-1.7 2		
Salmon, Coho <u>Oncorhynchus kisutch</u>	Muscle Raw	72.3	21.1	5.7	1.5	0	136
		67.0-75.3 19	19.9-22.0 20	1.3-9.9 24	1.1-2.5 15		
	Canned	68.6	20.7	7.6	1.6	1.5	157
		65.4-74.4 9	19.4-21.7 10	3.4-11.3 15	1.2-2.6 9		
	Salted	62.9	22.5	5.5	9.1	0	140
		61.4-64.4 2	21.8-23.2 2	5.1-5.8 2	8.2-10.0 2		
	Smoked & Salted	40.5	35.5	9.7	13.5	0.8	133
	Roe Raw	56.4	18.4	11.2	2.9	11.1	219
			9.1-27.7 2	10.9-11.4 2			
	Salmon, Longtooth <u>Otolithus ruber</u>	Muscle Raw	78.1	18.3	1.8	2.6	0
76.3-80.9 3			17.4-20.0 3	1.5-2.2 3	1.5-4.8 3		
Salted & Dried		23.9	48.8	2.9	24.4	0	221
Salmon, Pink <u>Oncorhynchus gorbuscha</u>	Muscle Raw	74.6	20.1	4.8	1.2	0	124
		69.9-77.4 10	17.5-22.0 10	1.8-12.5 2	1.2-1.3 9		
	Canned	72.5	19.3	6.4	1.6	0.2	136
		68.2-78.3 49	12.5-22.0 39	2.0-17.1 54	0.9-3.0 36		
	Salted	46.4	36.4	8.4	8.6	0.2	222
Salmon, Sockeye <u>Oncorhynchus nerka</u>	Muscle Raw	74.9	20.3	6.9	1.2	0	143
		65.6-88.5 29	13.7-23.1 23	1.6-13.2 24	1.1-2.4 15		
	Canned	67.3	20.4	9.3	2.0	1.0	169
		61.3-71.5 19	16.3-25.9 21	5.4-15.4 24	1.2-3.0 19		
	Whole Raw	72.2	18.4	7.8	(1.6)	0	144
		63.4-80.9 2	15.8-19.8 3	1.7-13.9 2			

Table 1.--Proximate composition of finfishes, whales, and products.

Common and Scientific Name	Description	Moisture	Protein	Fat	Ash	Carbo- hydrates ^{1/}	Calories ^{2/}
		%	%	%	%	%	Per 100 grams
Salmon Salmonidae	Offal Raw	67.1	16.1	13.7	(3.1)	0	188
	Roe Salted	53.0	25.0	15.0	6.2	0.8	238
	Muscle Raw	69.7 61.4-77.7	19.9 17.4-23.0	9.3 1.3-20.0	1.5 0.9-2.9	0	163
	Canned	15	21	25	15	0.6	162
		67.6 61.7-73.7	21.1 19.7-24.5	8.4 3.7-15.9	2.3 1.2-3.0		
	Cooked	17	20	19	14	7.9 4.2	225 191
		A la King Broiled	15.8 28.0	14.5 6.9	2.4 1.6		
	Fishloaf	66.9	16.0	6.4	2.3	8.4	155
		With Rice	12.0	4.5	1.8	7.3	118
	Molded Salad	69.9	15.1	9.2	2.1	3.7	158
	Smoked Rolls	31.1	15.0	30.7	3.0	20.2	417
	Steaks						
	Baked	67.6	26.1	3.8	1.6	0.9	142
	Steamed	65.4	19.1	13.0	(2.5)	0	193
	With Tomatoes	83.7	4.0	4.9	0.8	6.6	87
	Salted	59.2 48.5-64.4	21.9 17.5-25.2	7.5 5.1-14.6	10.8 7.8-17.2	0.6	158
	Smoked	4	4	4	4	0	171
		56.8 40.5-64.9	26.6 21.4-35.5	7.2 3.6-9.7	10.8 7.0-13.5		
	FPC	4	3	3	3	0.4	358
		8.1	88.6	0.2	2.7		
	Offal Fishmeal	9.5	51.0	17.4	(22.1)	0	361
	Roe						
	Canned	70.9	21.9	4.1	2.9	0.2	125
	Salted	53.0	25.0	11.6 9.3-15.0	6.2	4.2	221
Sandfish <u>Arctoscopus japonicus</u>	Muscle Raw	78.0 75.4-80.6	14.8 14.0-15.6	4.2 4.1-4.3	0.8 0.5-1.1	2.2	106
	Cooked	2	2	2	2	0	267
		30.2	44.8	9.8	15.1		
Sardine <u>Clupanodon pseudohispanicus</u>	Muscle Raw	70.8	20.6	7.0	1.3	0.3	148
Sardine <u>Opisthopterus tartoor</u>	Whole Raw	78.3	18.2	0.2	2.1	1.2	75
Sardine <u>Sardina (Sardinops) ocellata</u>	Muscle Raw	71.3 63.9-74.7	16.7 15.3-17.8	7.0 3.7-14.7	1.1 0.7-1.4	3.9	145
Sardine <u>Sardinella allecia</u>	Whole Raw	4	4	4	4	0	126
		72.7 72.5-72.8	20.6 20.4-20.7	4.8 4.7-4.9	2.9 2.7-3.0		

Table 1.--Proximate composition of finfishes, whales, and products.

Common and Scientific Name	Description	Moisture	Protein	Fat	Ash	Carbo- hydrates ^{1/}	Calories ^{2/}
		%	%	%	%	%	Per 100 grams
Sardine <u>Sardinella cameronensis</u>	Whole Smoked	24.5	51.7	5.0	17.4	1.4	257
Sardine <u>Sardinella eba</u>	Muscle Raw	77.1	19.0	3.7	2.6	0	109
Sardine, Golden <u>Sardinella aurita</u>	Muscle Raw	71.0 67.9-74.8 4	22.9 18.3-32.6 5	6.0 2.3-9.9 6	1.7 1.1-2.1 5	0	146
	Whole Raw	71.6	19.0 18.3-19.6 2	3.6	6.5	0	108
	Dried	23.9 22.8-24.9 2	57.0	5.7	14.5	0	279
	Salted & Smoked	23.3 22.5-24.1 2	56.3	5.4	14.2	0.8	277
Sardine, Indian <u>Sardinella longiceps</u>	Muscle Raw	74.0 58.0-77.2 9	17.3 13.9-21.0 9	5.4 1.9-27.5 9	1.5 1.0-1.8 9	1.8	125
	Dried	44.3 43.1-45.5 2	37.4	1.1	16.0	1.2	164
	Salted & Dried	43.1	37.4	1.1	16.0	2.4	169
	Salted & Smoked	58.3	33.2	3.6	5.1	0	165
	Whole Raw	70.8 66.2-78.5 5	18.2 16.9-19.4 2	9.3 9.1-9.7 3	(1.7)	0	157
Sardine, Red Ear <u>Harengula humeralis</u>	Muscle Smoked	48.2	36.2	9.1	6.0	0.5	229
Sardine, Scaled, Razorbelly <u>Harengula pensacolatae</u>	Whole Raw	70.3 65.5-76.0 21	18.7 17.5-20.0 22	6.2 1.8-12.1 22	5.1 3.4-7.2 22	0	131
Sardine, Spotted <u>Sardinella sirum</u>	Whole Dried	43.1	37.4	1.1	16.0	2.4	169
Sardine Clupeidae	Muscle Raw	73.6 66.5-76.6 6	18.9 16.7-22.1 6	6.8 2.3-15.2 7	2.0 1.2-2.5 5	0	139
	Canned In Oil	56.5 47.1-65.4 21	22.3 17.5-28.7 24	17.3 8.3-27.0 26	3.6 2.7-5.6 18	0.3	245
	In Tomato Sauce	66.1 63.1-71.5 6	17.3 15.8-17.8 6	11.2 6.6-14.8 6	3.1 2.5-4.2 6	2.3	179
	Unspecified	62.6 59.3-69.2 8	23.9 17.7-27.1 8	10.6 5.3-13.7 8	3.7 2.9-4.9 8	0	191

Table 1.--Proximate composition of finfishes, whales, and products.

Common and Scientific Name	Description	Moisture	Protein	Fat	Ash	Carbo- hydrates ^{1/}	Calories ^{2/}
		%	%	%	%	%	Per 100 grams
	Cooked						
	Appetizer	51.7	20.7	14.3	2.2	11.0	212
	Apple Salad	66.6	13.6	12.0	1.9	5.9	186
	Fried	12.1	38.8	38.8	9.9	0.4	506
	Salad	70.7	12.1	11.7	1.8	3.7	169
	Salad Sandwich	60.5	9.2	8.3	1.6	20.4	193
	Sardine-noodle						
	Casserole	66.5	11.4	9.4	2.0	10.7	173
	Toasted Cheese &						
	Sardine Sandwich	48.7	19.3	14.9	3.2	13.9	267
	Dried	30.5	45.6	14.8	8.5	0.6	318
	Half	60.0	21.9	4.8	1.6	11.7	131
		51.0-69.0	21.7-22.0	2.2-7.4			
		2	2	2			
	Marinated	64.1	15.8	15.9	2.5	1.7	213
	Smoked	15.4	70.0	8.4	6.2	0	356
	Paste						
	With Tomatoes	60.4	19.0	9.6	3.4	7.6	193
	Whole						
	Raw	59.8	21.1	18.2	5.0	0	248
		49.0-72.4	20.0-23.0	8.0-27.0	2.6-9.5		
		5	4	3	5		
	Smoked	25.1	54.0	6.9	14.0	0	278
	Fishmeal	6.2	64.2	5.6	16.7	7.3	336
		2.3-8.2	60.0-71.0	3.3-7.9	11.4-20.3		
		6	7	7	6		
	FPC	6.2	85.6	0.5	5.2	2.5	357
			81.8-89.3		0.8-9.6		
			2		2		
Sargeant Major	Whole						
<u>Abudefduf saxatilis</u>	Raw	81.2	14.6	2.1	2.5	0	77
Saury, Atlantic	Muscle						
<u>Scomberesox saurus</u>	Raw	74.8	16.5	6.1	1.2	1.4	121
		67.2-78.6	12.5-22.5	1.4-12.7			
		8	8	8			
Saury, Pacific	Muscle						
<u>Cololabis saira</u>	Raw	66.8	20.0	11.1	1.5	0.6	182
		58.7-71.1	18.5-23.8	1.2-21.2	1.3-2.4		
		22	14	26	7		
	Canned						
	Seasoned	59.2	20.6	10.2	4.1	5.9	198
	With Tomatoes	65.8	19.0	10.3	2.5	2.4	178
	Dried	64.9	22.7	8.6	4.2	0	168
	Salted	61.4	20.1	9.8	8.5	0.2	169
	Seasoned & Dried	42.0	35.1	14.3	5.6	3.0	281
Sawfish	Muscle						
<u>Pristidae</u>	Raw	72.3	21.8	4.6	1.3	0	128
Scad	Muscle						
<u>Caranx gunnostethades</u>	Raw	75.9	21.8	0.6	1.3	0.4	94
Scad	Muscle						
<u>Trachurus lathami</u>	Raw	69.4	18.5	11.4	1.4	0	177
		68.0-70.8	18.2-18.7	9.8-13.0	1.3-1.5		
		2	2	2	2		
	Whole						
	Raw	76.9	17.3	2.2	3.6	0	89

Table 1.--Proximate composition of finfishes, whales, and products.

Common and Scientific Name	Description	Moisture	Protein	Fat	Ash	Carbo- hydrates ^{1/}	Calories ^{2/}
		%	%	%	%	%	Per 100 grams
Scad, Bigeyed <u>Caranx crumenophthalmus</u>	Muscle Raw	78.5	19.5	1.1	1.7	0	88
		76.5-80.6 4	17.5-23.6 5	0.1-2.7 4	1.3-1.8 4		
	Cooked Fried Salted & Dried	62.6	26.9	7.8	2.1	0.6	180
		42.5	37.8	1.5	17.4	0.8	167
		41.7-43.3 2					
	Smoked	56.7	35.5	5.3	3.1	0	190
Scad, Golden <u>Caranx kalla</u>	Muscle Raw	76.8	18.8	1.5	1.4	1.5	95
		76.6-77.0 2	18.0-19.6 2	0.7-2.2 3	1.2-1.5 2		
Scad, Horse Mackerel <u>Trachurus novaezelandie</u>	Muscle Raw	71.7	22.4	3.2	2.8	0	118
		66.8-76.6 2	19.8-25.0 2	2.3-4.0 2	1.4-4.2 2		
	Salted & Dried	8.3	60.9	5.4	25.4	0	292
Scad, Mackerel <u>Decapterus macarellus</u>	Muscle Raw	75.7	21.7	1.3	1.5	0	99
		74.2-76.7 4	19.2-24.4 5	1.0-1.7 5	1.1-1.8 4		
	Salted & Dried	32.8	51.0	3.5	12.6	0	236
		26.6-37.6 3	43.3-61.1 3	1.8-4.8 3	10.5-14.8 3		
	Whole Raw	73.5	20.3	1.5	4.6	0.2	95
Scad, Round <u>Decapterus pinnulatus</u>	Muscle Cooked Fried						
		65.8	25.2	5.1	2.0	1.9	155
Scad <u>Carangidae</u>	Whole Fishmeal						
		6.5	69.5	7.2	17.1	0	343
Scorpionfish, Rosefish <u>Helicolenus dactylopterus</u>	Muscle Raw	79.3	17.4	2.4	1.3	0	91
		79.0-79.5 2	16.6-18.1 2	2.2-2.5 2	1.1-1.5 2		
Scorpionfish, Yellow <u>Scorpaena scropha</u>	Muscle Raw	75.9	20.1	1.9	1.7	1.4	98
		65.1-80.7 4	15.1-27.7 4	0.9-4.0 4	1.2-3.2 4		
Sculpin <u>Cottus pollux</u>	Muscle Dried						
		10.2	60.7	14.2	12.9	0.2	371
Sculpin, Sea Raven <u>Hemitripterus americanus</u>	Muscle Cooked Steamed						
		74.9	21.2	5.0	0	0	130
		71.6-81.0 3	21.0-21.3 2	4.7-5.2 2			
Scup, Sea Bream <u>Stenotomus chrysops</u>	Muscle Raw	75.5	18.8	3.7	1.2	0.8	102
		73.6-77.0 5	18.4-19.1 5	1.2-5.9 5	1.1-1.4 6		

Table 1.--Proximate composition of finfishes, whales, and products.

Common and Scientific Name	Description	Moisture	Protein	Fat	Ash	Carbo- hydrates ^{1/}	Calories ^{2/}
		%	%	%	%	%	Per 100 grams
	Whole						
	Raw	70.6	17.8	3.1	8.9	0	99
	Offal						
	Raw	65.1	17.2	12.1	6.7	0	178
		61.9-68.2	17.1-17.3	8.6-15.6	6.5-6.8		
		2	2	2	2		
Sea Crow	Muscle						
<u>Corvina nigrita</u>	Raw	76.5	19.2	0.5	1.1	4.7	100
			16.3-22.0	0.4-0.6	0.9-1.2		
			2	2	2		
	Dried	19.0	67.0	9.1	4.9	0	350
Sea Cucumber	Muscle						
<u>Stichopus japonicus</u>	Raw	89.8	6.8	0.9	1.5	1.0	39
		84.9-95.2	1.3-11.4	0.2-1.4	0.1-2.7		
		18	17	16	16		
	Dried	8.9	82.0	1.7	2.6	4.8	363
	Dried & Soaked	79.0	18.9	0.4	0.6	1.1	84
Sea Cucumber, Red	Muscle						
<u>Stichopus californicus</u>	Raw	89.7	10.6	0.6	1.7	0	48
		86.2-93.1					
		2					
Sea Cucumber	Muscle						
Holothuroidae	Raw	87.7	6.5	0.8	2.8	2.2	42
		81.8-91.9	2.5-10.0	0.1-1.4	1.4-4.3		
		6	5	3	3		
	Dried	37.3	38.8	1.3	17.1	5.5	189
Sea Devil	Muscle						
<u>Scorpaena porcus</u>	Raw	73.2	18.3	1.5	1.5	5.5	109
		61.4-79.7	16.2-19.5	0.5-2.1	1.1-2.1		
		3	4	4	3		
Sea Robin, Armoured	Muscle						
<u>Peristedion cataphractum</u>	Raw	70.3	19.5	8.8	1.4	0	157
Sea Robin, Gurnard	Muscle						
<u>Trigla aspera</u>	Raw	78.1	17.8	3.1	1.3	0	99
Sea Robin, Gurnard	Muscle						
<u>Trigla lineata</u>	Raw	79.9	17.3	2.3	1.2	0	90
Sea Robin, Gurnard	Muscle						
<u>Trigla lyra</u>	Raw	77.7	18.6	2.8	1.6	0	100
Sea Robin, Gurnard, Grey	Muscle						
<u>Trigla gurnardus</u>	Raw	83.3	14.5	2.8	1.2	0	83
				1.4-3.9			
				3			
Sea Robin, Gurnard, Red	Muscle						
<u>Trigla capensis</u>	Raw	78.8	18.3	0.9	1.8	0	81
		78.4-79.2	18.0-18.6	0.6-1.3	1.6-2.1		
		2	2	3	2		
	Whole						
	Raw	76.9	18.2	1.0	(3.9)	0	82
Sea Robin, Gurnard, Red	Muscle						
<u>Trigla cuculus</u>	Raw	77.5	17.7	3.4	1.0	0.4	103
		74.0-81.4	17.2-18.3	0.4-6.3			
		3	3	3			

Table 1.--Proximate composition of finfishes, whales, and products

Common and Scientific Name	Description	Moisture	Protein	Fat	Ash	Carbo- hydrates ^{1/}	Calories ^{2/}
		%	%	%	%	%	Per 100 grams
Sea Robin, Gurnard, Yellow <u>Trigla lucerna</u>	Muscle Raw	79.3 79.1-79.4 2	17.6 17.1-18.1 2	1.3 0.7-1.9 2	1.0 1.0-1.1 2	0.8	85
Sea Robin Triglidae	Muscle Raw	76.2 72.8-82.0 9	18.6 16.5-22.9 6	1.9 1.0-2.9 8	1.6 1.1-2.4 6	1.7	98
	Whole Raw	75.2 73.3-77.0 2	16.6 16.4-16.8 2	2.0 1.2-2.8 2	6.4 6.2-6.7 2	0	84
	Roe Raw	74.0	16.4	7.1	1.3	1.2	134
Sea Trout, Corvina <u>Cilus monti</u>	Muscle Raw	76.2 74.9-77.5 2	20.5	0.5	1.4	1.4	92
Sea Trout, Gray <u>Cynoscion regalis</u>	Muscle Raw	76.6 74.6-79.6 7	18.8 15.7-20.0 8	3.1 1.4-4.3 8	1.2 1.1-1.3 8	0.3	94
	Offal Raw	74.5	13.6	10.8	3.1	0	152
Sea Trout <u>Cynoscion arenarius</u>	Whole Raw	74.0 69.0-79.3 7	17.1 15.8-17.7 7	5.8 1.8-10.9 7	3.1 2.7-3.6 7	0	121
Sea Trout, Silver <u>Cynoscion nothus</u>	Whole Raw	75.4	17.1	4.6	3.0	0	110
Sea Trout, Spotted <u>Cynoscion nebulosus</u>	Muscle Raw	79.9 79.0-81.4 4	17.3 16.2-18.5 3	2.1 1.4-3.2 3	0.9 0.8-1.0 3	0	88
	Whole Salted & Dried	28.0	48.8	2.9	24.4	0	221
Seventy-four <u>Dentex undulosus</u>	Muscle Raw	76.4	20.6	1.2	1.3	0.5	93
Shad <u>Clupea alosa</u>	Muscle Raw	74.1 69.5-78.7 2	18.2 17.3-19.0 2	5.7 1.3-10.0 2	1.0	1.0	128
	Roe Raw	71.0	21.0	3.8	(4.2)	0	118
Shad <u>Ethmalosa dorsalis</u>	Muscle Raw	71.4	20.3	4.1	4.2	0	118
	Whole Raw	69.2 68.0-70.3 4	20.4 20.3-20.6 4	4.5 3.1-6.6 4	5.7 5.5-5.9 4	0.2	123
	Dried	10.4	51.5	19.0	18.6	0.5	379

Table 1.--Proximate composition of finfishes, whales, and products.

Common and Scientific Name	Description	Moisture	Protein	Fat	Ash	Carbo- hydrates ^{1/}	Calories ^{2/}
		%	%	%	%	%	Per 100 grams
Shad, American <u>Alosa sapidissima</u>	Muscle Raw	70.3	18.0	11.2	1.3	0	173
		64.6-72.9	15.7-19.9	3.0-17.2	1.2-1.5		
	Canned Dried	8	8	8	7		
		71.1	16.9	8.8	2.8	0.4	148
	Offal Raw	6.7	88.6	0	5.4	0	354
		62.7	16.7	16.3	3.4	0.9	217
		61.4-63.8	13.8-20.7	11.5-19.9	3.2-3.6		
		3	3	3	3		
Shad, Bastard <u>Konosirus thrissa</u>	Muscle Raw	74.8	19.8	4.3	1.8	0	118
		73.7-77.0	19.4-20.0	0.7-10.5	1.7-1.9		
		3	3	5	3		
Shad, Gizzard <u>Anodontostoma chacunda</u>	Muscle Raw	77.9	18.1	1.4	2.1	0.5	87
		77.4-78.4	18.0-18.2	1.2-1.5	1.3-2.9		
		3	3	3	3		
	Salted & Dried	49.9	23.7	5.5	19.4	1.5	150
		48.3-51.5					
	Smoked	2					
Shad, Gizzard <u>Dorosoma cepedianum</u>	Muscle Raw	66.7	23.0	2.1	2.8	5.4	132
		69.7	17.0	11.2	1.7	0.4	170
		64.1-81.6	13.8-20.6	0.9-19.8	1.2-2.5		
	Whole Raw	7	7	7	7		
		67.2	13.8	16.2	2.4	0.4	202
		63.8-70.6	12.0-15.5	14.2-18.2	2.2-2.5		
		2	2	2	2		
Shad, Hickory <u>Alosa mediocris</u>	Muscle Raw	60.8	12.8	22.8	3.9	0	256
		58.0-63.5	10.5-15.1	22.4-23.1	3.6-4.2		
		2	2	2	2		
Shad, Indian <u>Clupea toli</u>	Muscle Raw	76.3	18.5	4.8	1.4	0	117
Shad, Indian <u>Hilsa ilisha</u>	Muscle Raw	78.3	18.0	0.7	1.8	1.2	83
		63.3	20.7	25.1	1.7	0	309
		53.7-71.5	17.4-22.8	17.6-41.2	1.2-2.2		
		3	6	4	2		
Shad, Slender <u>Ilisha elongata</u>	Whole Fishmeal	5.4	62.2	14.3	5.5	12.6	428
		4.2-6.5	60.0-64.3	12.3-16.2	4.6-6.4		
		2	2	2	2		
Shad, Threadfin <u>Dorosoma petenense</u>	Muscle Raw	76.4	14.6	7.6	1.4	0	127
Shad Clupeidae	Whole Raw	76.2	11.3	8.0	4.3	0.2	118
		71.0	19.4	8.3	1.3	0	152
		63.9-79.1	18.4-21.9	1.2-12.9	1.1-1.4		
		4	4	4	4		
Cooked Baked With Bacon		64.0	23.5	11.8	(0.7)	0	200

Table 1.--Proximate composition of finfishes, whales, and products.

Common and Scientific Name	Description	Moisture	Protein	Fat	Ash	Carbo- hydrates ^{1/}	Calories ^{2/}
		%	%	%	%	%	Per 100 grams
	Unspecified	64.0	23.2	11.3			
	Creole	73.3	15.0	8.7	1.4	0	195
	FPC	6.6	87.1	1.7	1.4	1.6	145
		5.9-7.2	85.9-88.6	0.1-4.6	4.3	0.3	365
		3	3	3	3.3-5.4		
	Whole						
	Dried & Smoked	17.1	64.9	3.6	14.4	0	292
	Roe						
	Raw	71.2	23.4	3.8	1.6	0	128
	Cooked						
	Broiled	71.5	19.9	2.4	2.0	4.2	118
Shadefish, Meagre	Muscle						
<u>Sciaena aquila</u>	Raw	76.7	18.5	1.6	1.8	1.4	94
		76.2-77.0	17.4-20.1	0.9-2.2	1.3-2.3		
		3	3	3	2		
	Whole						
	Salted & Dried	13.0	57.2	6.5	29.6	0	287
Shark	Muscle						
<u>Mustelus fasciatus</u>	Raw	75.0	20.6	1.5	(2.9)	0	96
Shark, Blacktip	Muscle						
<u>Carcharhinus limbatus</u>	Raw	75.1	23.2	0.3	1.3	0	96
		72.0-78.1	17.7-26.1	0.1-0.5	1.1-1.4		
		2	3	2	2		
Shark, Blue	Muscle						
<u>Carcharhinus brachyurus</u>	Raw	75.8	18.9	0.1	0.6	4.6	95
Shark, Blue	Muscle						
<u>Carcharhinus glaucus</u>	Raw	82.5	12.5	1.2	1.0	2.8	72
		79.3-86.3	10.5-20.2	0.5-2.0	0.8-1.2		
		5	7	6	5		
Shark, Bull	Muscle						
<u>Carcharhinus gangeticus</u>	Raw	76.5	18.6	0.2	1.3	3.4	90
Shark, Cat	Fin						
<u>Chiloscyllium plagiosum</u>	Raw	72.2	26.3	0.6	6.2	0	111
Shark, Cat	Muscle						
<u>Scyliorhinus caniculus</u>	Raw	78.7	14.4	0.7	1.2	5.0	84
				0.6-0.8			
				3			
Shark, Cat, Nurse Hound	Muscle						
<u>Scyliorhinus stellaris</u>	Raw	79.3	20.5	0.5	2.0	0	87
		77.0-81.0					
		3					
Shark, Darkie Charlie	Muscle						
<u>Dalatius licha</u>	Raw	68.8	28.1	0.2	6.6	0	114
Shark, Elephant	Muscle						
<u>Callorhynchus milii</u>	Raw	76.9	21.3	0.3	1.2	0.3	89
Shark, Greenland	Muscle						
<u>Somniosus microcephalus</u>	Raw	66.2	(22.6)	10.0	1.2	0	180
Shark, Gummy	Muscle						
<u>Mustelus antarcticus</u>	Raw	75.8	25.2	0.3	1.4	0	104
		74.5-77.0	23.4-27.0	0.2-0.4			
		2	2	2			

Table 1.--Proximate composition of finfishes, whales, and products.

Common and Scientific Name	Description	Moisture	Protein	Fat	Ash	Carbo- hydrates ^{1/}	Calories ^{2/}
		%	%	%	%	%	Per 100 grams
	Canned	65.7 62.9-72.8 4	24.5 21.6-29.0 4	4.1 2.1-5.8 4	3.6 3.0-4.6 4	2.1	143
Shark, Hammerhead <u>Sphyrna blochii</u>	Muscle Raw	75.4 75.1-75.6 2	22.3 21.6-23.0 2	0.4 0.2-0.5 2	1.4 1.1-1.6 2	0.5	95
Shark, Hammerhead, Smooth <u>Sphyrna zygaena</u>	Muscle Raw	77.2 76.1-78.3 2	20.8 19.6-22.6 2	0.3 0.3-0.3 2	1.2 1.1-1.3 2	0.5	88
Shark, Hammerhead Sphyrnidae	Muscle Raw	75.0 74.1-76.1 3	22.6	0.3	1.1	1.0	97
Shark, Horn <u>Heterodontis francisci</u>	Muscle Raw	79.6	17.7	0.3	1.8	0.6	76
Shark, Mackerel, Blue-pointer <u>Lamna glauca</u>	Muscle Dried	29.5	53.7	1.9	23.1	0	232
Shark, Mushi <u>Scoliodon sorrakewa</u>	Muscle Raw Dried	76.5 9.6	14.9 67.0	2.9 4.9	1.0 (18.5)	4.7 0	105 312
Shark, Pacific Angel <u>Squatina californica</u>	Fin Raw	71.6	27.5	0.4	5.0	0	114
Shark, Porbeagle, Mackerel <u>Lamna cornubica</u>	Muscle Raw	76.6 75.5-77.7 2	21.2 18.1-23.5 3	2.7 1.9-4.1 3	0.8	0	109
Shark, Porbeagle, Mackerel <u>Lamna nasus</u>	Muscle Raw	76.9 75.8-78.5 6	17.2 14.6-21.5 3	1.5 0.9-2.2 5	1.3 1.2-1.3 2	3.1	95
Shark, Porbeagle, Salmon <u>Lamna ditropis</u>	Muscle Raw	69.4 62.4-76.4 2	17.0 13.4-20.6 2	12.2 0.2-24.2 2	1.7 1.5-1.9 2	0	178
Shark, Porbeagle, Mackerel <u>Lamnidae</u>	Muscle Raw	76.1	18.8	0.4	1.0	3.7	94
Shark, Requiem Carcharhinidae	Muscle Raw	78.6 77.0-79.9 3	19.1 16.7-20.6 3	1.2 0.4-1.8 3	1.2 1.1-1.4 3	0	87
	Salted & Dried	13.6	72.7	1.3	13.3	0	303
	Fin Cooked Fried	11.3 8.8-13.8 2	85.9 82.4-89.4 2	0.2 0.2-0.2 2	1.2 0.8-1.5 2	1.4	351
Shark, Sand <u>Carcharias laticanous</u>	Muscle Raw	75.5	22.9	0.7	1.4	0	98
Shark, Sand <u>Carcharias menisorrh</u>	Muscle Raw	76.0	21.6	0.4	1.2	0.8	93

Table 1.--Proximate composition of finfishes, whales, and products.

Common and Scientific Name	Description	Moisture	Protein	Fat	Ash	Carbo- hydrates ^{1/}	Calories ^{2/}
		%	%	%	%	%	Per 100 grams
Shark, School <u>Galeorhinus australis</u>	Muscle	78.1	23.3	0.2	1.2	0	95
	Raw	77.8-78.4 3	22.9-23.4 3	0.1-0.2 3	1.2-1.3 3		
Shark, Sevengill <u>Notorynchus maculatus</u>	Muscle	67.9	15.3	13.1	1.2	2.5	189
	Raw						
Shark, Sharpnose <u>Scoliodon palasorrah</u>	Muscle	76.3	22.6	1.4	1.0	0	103
	Raw		21.3-23.9 3	0.4-2.4 2	0.5-1.4 2		
	Dried	14.4	81.9	0.1	1.5	2.1	335
Shark, Sharpnose, Pacific <u>Scoliodon longurio</u>	Muscle	75.0	21.8	0.5	1.4	1.3	97
	Raw						
Shark, Silky <u>Carcharhinus falciformis</u>	Muscle	73.6	21.7	(3.5)	1.2	0	118
	Raw						
Shark, Smoothhound <u>Mustelus vulgaris</u>	Muscle	77.1	19.7	0.9	1.2	1.1	91
	Raw	76.3-77.8 2	16.0-23.3 2	0.6-1.2 2	1.1-1.2 2		
Shark, Soupfin <u>Galeorhinus zyopterus</u>	Muscle	77.2	19.1	1.0	1.4	1.3	91
	Raw						
Shark, Spotted Hound <u>Mustelus manazo</u>	Fin	69.8	24.9	0.4	10.5	0	103
	Raw						
Shark, Tope <u>Galeorhinus galus</u>	Muscle	78.6	19.1	0.5	1.3	0.5	83
	Raw	76.3-82.3 4	14.2-23.6 3	0.1-1.2 3	1.2-1.4 3		
	Salted	72.7 39.3 34.0-44.5 2	28.3 44.2 38.6-49.7 2	0.2 2.3 1.5-3.1 2	1.4 23.2 19.0-27.4 2	0 0	115 198
Shark, Thresher <u>Alopias vulpinus</u>	Muscle	78.4	20.2	1.3	1.3	0	93
	Raw	75.7-81.0 2	19.3-21.6 3	0.3-3.3 3			
	Fin	67.9	24.6	0.1	7.5	0	99
Shark, Tiger <u>Galeocerdo arcticus</u>	Muscle	79.4	10.3	0.1	0.6	3.6	81
	Raw						
Shark, Whitetip <u>Carcharhinus albimarginatus</u>	Muscle	76.9	19.9	0.3	1.3	1.6	89
	Raw						
Sheathfish <u>Kryptopterus kryptopterus</u>	Muscle	80.7	17.8	1.1	0.9	0	81
	Raw						
Sheathfish <u>Parasilurus asotus</u>	Muscle	77.3	18.3	2.3	1.4	0.7	97
	Raw						
Sheathfish <u>Tachysurus gambensis</u>	Muscle	81.8	18.0	0.6	0.6	0	77
	Raw						
Sheathfish <u>Tachysurus heudeloti</u>	Muscle	79.1	19.2	0.7	1.0	0	83
	Raw						
Sheefish, Inconnu <u>Stenodus mackenzii</u>	Muscle	73.3	19.9	6.8	1.3	0	141
	Raw						

Table 1.--Proximate composition of finfishes, whales, and products.

Common and Scientific Name	Description	Moisture	Protein	Fat	Ash	Carbo- hydrates ^{1/}	Calories ^{2/}
		%	%	%	%	%	Per 100 grams
Shiner, Emerald <u>Notropis hudsonius</u>	Whole Raw	69.9	13.0	11.9	2.2	3.0	171
Silverfish <u>Dentex argyrozona</u>	Muscle Raw	76.3 76.0-76.5 2	20.5 20.3-20.7 2	1.4 1.0-1.8 2	1.3	0.5	96
Silverside <u>Atherina forskali</u>	Muscle Dried, Rinsed, and Drained	28.9	57.1	7.9	4.8	1.3	300
Silverside <u>Atherina presbyter</u>	Muscle Raw	79.0	18.0	1.5	1.5	0	86
Silverside <u>Austromenidia regia</u>	Muscle Raw	74.5 71.9-77.1 2	18.3 17.9-18.7 2	1.2	1.6	4.4	101
Silverside Atherinidae	Muscle Raw	78.4 75.1-82.0 5	19.7 18.8-20.5 2	1.3 0.8-1.8 2	2.1 1.6-2.5 2	0	91
	Whole Raw	73.2 67.5-78.9 2	17.4	5.9	8.2	0	123
Skate <u>Raja platana</u>	Muscle Raw	75.7	22.4	1.3	0.6	0	101
	Whole FPC	7.3	82.3	0.6	3.9	5.9	358
Skate, Blue <u>Raja batis</u>	Muscle Raw	78.0	21.3 20.0-22.6 2	1.0	0.7	0	94
Skate, Flatback <u>Raja kenojei</u>	Muscle Raw	78.9	19.2	0.9	1.0	0	85
Skate, Starry Ray <u>Raja asterias</u>	Muscle Raw	77.2 76.1-78.2 2	19.6 14.2-25.0 2	0.7 0.5-0.9 2	1.4 1.1-1.7 2	1.1	89
Skate, Thornback <u>Raja clavata</u>	Muscle Raw	79.6	20.7 19.0-22.4 2	0.2	1.1	0	85
Skate Rajidae	Muscle Raw	79.4 76.4-84.5 10	20.3 13.3-25.6 10	1.3 0.5-6.1 10	1.3 0.9-1.7 6	0	93
	Cooked Boiled	74.0	26.3	0.7	0.9	0	111
	Fried Battered	55.4	15.0	16.4	(1.3)	(11.9)	255
Sleeper <u>Eleotris fusca</u>	Muscle Raw	78.4	18.5	0.7	1.1	1.3	85

Table 1.--Proximate composition of finfishes, whales, and products.

Common and Scientific Name	Description	Moisture	Protein	Fat	Ash	Carbo- hydrates ^{1/}	Calories ^{2/}
		%	%	%	%	%	Per 100 grams
Sleeper <i>Oxyeleotris marmorata</i>	Muscle Raw	79.2	19.1	0.3	0.9	0.5	81
Slimy, Soapy, Ponyfish <i>Leiognathus equula</i>	Muscle Raw	79.1 77.1-81.0	17.8 16.7-19.6	1.2 0.5-1.8	1.4 1.0-1.9	0.5	84
	Dried	5 36.8	5 43.4	5 4.9	5 15.0	0	218
	Whole Raw	76.2 76.0-76.4	19.0 18.8-19.2	1.4 1.2-1.6	3.4 3.2-3.6	0	89
		2	2	2	2		
Slimy, Soapy <i>Leiognathus insidiatrix</i>	Muscle Raw	77.4	19.4	1.1	2.1	0	88
Slipmouth, Black-Finned <i>Leiognathus daura</i>	Muscle Raw	78.7 78.2-79.2	19.6	1.0	1.2	0	87
		2					
Slipmouth Leiognathidae	Muscle Raw	78.0 77.4-79.1	20.8 19.2-22.5	0.5	1.5 1.3-1.7	0	88
		3	2		2		
	Salted & Dried	41.4	45.6	2.5	10.5	0	205
Smelt <i>Osmerus dentex</i>	Muscle Dried	14.9	64.7	13.1	9.7	0	377
Smelt, Eulachon <i>Thaleichthys pacificus</i>	Muscle Raw	79.6	14.5	6.5	1.3	0	117
Smelt, Lake <i>Osmerus mordax</i>	Muscle Raw	79.4 77.9-81.0	18.8 18.5-18.9	2.0 0.9-2.4	1.1 1.1-1.2	0	93
		4	4	4	3		
	Canned	54.7	21.1	13.5	5.4	5.3	206
	Dressed Raw	78.5 78.4-78.6	17.1 16.4-17.8	2.5 2.3-2.7	2.0 1.6-2.3	0	91
		2	2	2	2		
	Whole Raw	79.9 75.5-87.9	15.5 12.7-17.8	4.0 2.2-7.6	2.3 2.0-2.6	0	98
		5	5	5	5		
	Cooked Unspecified	84.3 83.3-85.3	14.0 12.8-15.1	2.6 1.9-3.3	2.1 2.1-2.2	0	79
		2	2	2	2		
	Whole Raw	76.4 75.0-77.8	17.1	2.9	4.0 3.0-5.0	0	95
		2			2		
Smelt, Pond <i>Hypomesus olidus</i>	Whole Raw	76.4 75.0-77.8	17.1	2.9	4.0 3.0-5.0	0	95
		2			2		
	Muscle Raw	77.7 76.3-78.6	16.8 14.6-18.8	3.7 1.0-6.5	1.4 1.3-1.4	0.4	102
		6	4	9	4		
Smelt, Sweet, Ayu <i>Plecoglossus altivelis</i>	Dried	8.9	55.4	27.1	10.3	0	466
	Whole Raw	74.8	14.1	7.5	2.7	0.9	128

Table 1.--Proximate composition of finfishes, whales, and products.

Common and Scientific Name	Description	Moisture	Protein	Fat	Ash	Carbo- hydrates ^{1/}	Calories ^{2/}
		%	%	%	%	%	Per 100 grams
Smelt <i>Osmeridae</i>	Roe Salted	59.1	19.4	4.3	20.2	0	116
	Muscle Raw	79.4 76.8-81.5 6	17.0 15.6-18.7 5	1.4 1.0-1.8 4	1.4 0.8-1.7 4	0.8	86
	Whole Cooked						
	Fried						
	Floured	34.3	25.0	30.8	(4.9)	5.0	397
	Dried	52.5 42.1-63.0 2	24.3 13.3-35.2 2	7.7 4.9-10.5 2	17.2 13.3-21.0 2	0	235
	Dressed Raw	68.6	12.0	19.9	1.7	0	234
	Snapper <i>Chrysophrys guttulatus</i>						
	Muscle Raw	75.5	20.7	2.1	(1.7)	0	102
	Snapper <i>Lutianus fulvus</i>						
Snapper, Grey <i>Lutianus griseus</i>	Muscle Raw	78.4	19.7	0.4	1.1	0.4	84
	Snapper, Grey <i>Lutianus griseus</i>						
	Muscle Raw	78.3	17.6	1.6	1.2	1.3	90
	Snapper, Kulisic <i>Hemipterus japonica</i>						
	Muscle Raw	76.6	18.0	4.7	1.6	0	114
	Snapper, Malabar <i>Lutianus malabaricus</i>						
	Muscle Raw	77.2 74.6-79.2 3	18.2 17.8-18.7 3	1.1 0.2-2.1 3	1.4 1.3-1.5 3	2.1	91
	Snapper, Pargo <i>Lutianus colorado</i>						
	Muscle Raw	78.8 75.7-81.9 2	19.7 18.3-21.1 2	1.3 0.5-2.1 2	1.2	0	91
	Snapper, Red <i>Lutianus campechanus (blackfordii)</i>						
Snapper, Red <i>Lutianus campechanus (blackfordii)</i>	Muscle Raw	77.8 76.0-79.2 11	20.2 18.4-22.4 4	2.6 0.4-7.4 5	1.6 1.1-2.2 5	0	104
	Cooked Fried						
	Breaded	46.0	16.4	9.5	5.5	22.6	242
	FPC	8.7	93.3	0.1	2.7	0	374
	Whole Raw	77.4	17.6	1.0	5.4	0	79
	Snapper, Tanda-Tanda <i>Lutianus kasmira</i>						
	Muscle Raw	78.1 77.5-78.8 2	19.4 18.4-20.4 2	0.7	1.3 1.2-1.3 2	0.5	89
	Snapper, Yellowtail <i>Ocyurus chrysurus</i>						
	Muscle Raw	79.8 79.2-80.3 2	19.9 18.8-20.9 2	0.8 0.7-0.8 2	1.2	0	87
	Snapper <i>Lutianidae</i>						
Snapper <i>Lutianidae</i>	Muscle Raw	78.4 75.5-80.8 6	19.4 16.7-21.9 7	1.1 0.3-2.1 7	1.5 1.2-2.2 6	0	88

Table 1.--Proximate composition of finfishes, whales, and products.

Common and Scientific Name	Description	Moisture	Protein	Fat	Ash	Carbo- hydrates ^{1/}	Calories ^{2/}
		%	%	%	%	%	Per 100 gram ³
Snook, Constantino <u>Centropomus robalito</u>	Muscle Raw	78.8	20.6	0.9	1.1	0	91
Snook, Nile Perch <u>Lates neloticus</u>	Muscle Raw	75.5	21.9	1.5	1.1	0	101
	Dried	12.2	70.0	13.4	4.4	0	401
Snook, Robalo <u>Centropomus armatus</u>	Muscle Raw	77.8	20.4	0.9	1.1	0	90
		76.9-78.5 3	20.0-21.3 3	0.7-1.0 3	1.0-1.2 3		
Sole <u>Solea impar</u>	Muscle Raw	78.5	18.6	1.7	2.1	0	90
			15.9-21.2 2				
Sole, Dover <u>Microstomus pacificus</u>	Muscle Raw	83.6	15.1	0.9	1.1	0	78
		82.6-84.4 7	13.9-16.6 8	0.6-1.2 8	1.1-1.2 5		
	Whole Raw	81.9	12.7	3.5	2.7	0	82
	Offal Raw	81.2	11.7	4.4	3.5	0	86
Sole, Dover <u>Solea solea</u>	Muscle Raw	78.8	16.1	2.5	1.7	0.9	91
		76.8-80.1 3	15.5-16.6 2	1.3-3.7 2	1.3-2.0 2		
Sole, English <u>Parophrys vetulus</u>	Muscle Raw	80.8	16.8	1.7	1.2	0	82
		79.2-81.8 5	16.4-18.5 7	1.2-1.8 6	1.2-1.3 6		
	Offal Raw	75.7	13.9	7.0	4.7	0	119
Sole, European <u>Solea vulgaris</u>	Muscle Raw	78.7	20.1	1.4	1.2	0	93
		77.8-79.2 4	18.5-22.5 3	0.5-2.3 4			
Sole, Flathead <u>Hippoglossoides elassodon</u>	Muscle Raw	81.3	18.6	1.1	1.1	0	84
		80.0-82.5 5	17.6-19.7 4	0.9-1.3 4	1.0-1.2 3		
Sole, Lemon <u>Microstomus kitt</u>	Muscle Raw	81.8	16.7	1.2	1.1	0	78
		79.1-84.1 3	15.2-18.1 3	0.7-1.9 6	1.0-1.2 2		
	Cooked Fried						
	Battered Steamed	60.4 77.2	15.4 19.9	13.0 0.9	1.9 (2.0)	9.3 0	216 88
Sole, Lengado <u>Paralichthys adspersus</u>	Muscle Raw	77.8	19.4	0.4	1.3	1.1	86
		75.0-80.3 5	16.6-21.6 4	0.3-0.4 2			

Table 1.--Proximate composition of finfishes, whales, and products.

Common and Scientific Name	Description	Moisture	Protein	Fat	Ash	Carbo- hydrates ^{1/}	Calories ^{2/}
		%	%	%	%	%	Per 100 grams
Sole, Petrale <u>Eopsetta jordani</u>	Muscle						
	Raw	78.4 74.2-81.0 6	18.2 15.4-20.4 8	2.0 0.9-3.4 7	1.1 1.0-1.2 6	0.3	92
	Cooked						
	Steamed	75.4 74.2-76.6 2	19.9 19.4-20.4 2	2.6 1.7-3.4 2	(2.1)	0	103
	Whole						
Sole, Rex <u>Glyptocephalus zachirus</u>	Raw	76.5	15.9	4.9	2.9	0	108
	Offal						
	Raw	72.0 67.8-74.8 3	15.4 14.6-16.7 3	7.2 6.7-7.8 3	5.7 3.8-9.0 3	0	126
	Muscle						
	Raw	82.9 82.4-83.4 2	16.4 13.8-18.2 4	0.7 0.7-0.8 3	1.2 1.2-1.1 2	0	72
Sole, Rock <u>Lepidopsetta bilineata</u>	Whole						
	Raw	81.4	13.6 13.6-13.6 2	2.7	2.5	0	79
	Offal						
	Raw	81.1	12.4	3.5	3.1	0	81
	Muscle						
Sole, Sand <u>Psettichthys melanostictus</u>	Raw	80.2 79.2-80.7 3	18.6 17.9-19.2 5	1.2 0.7-1.6 4	1.1 0.9-1.3 3	0	85
	Muscle						
	Raw	82.1	17.2	0.5	1.1	0	73
	Muscle						
	Raw	79.7	18.4	0.2	1.3	1.7	82
Sole, Tong <u>Austroglossus pectoralis</u>	Muscle						
	Raw	79.7	18.4	0.2	1.3	1.7	82
	Muscle						
	Raw	79.7	18.4	0.2	1.3	1.7	82
	Muscle						
Sole, Yellowfin <u>Limanda aspera</u>	Raw	80.5 79.2-82.7 3	17.4 17.0-18.2 4	1.1 0.8-1.3 4	1.4 1.2-1.6 3	0	80
	Muscle						
	Raw	79.5 75.0-86.1 9	17.9 14.9-21.1 10	1.0 0.3-2.0 11	1.1 0.9-1.2 8	0.5	83
	Fish Portions	59.7 53.6-65.9 2	13.6 12.6-14.6 2	5.1 0.7-9.4 2	(1.6) (1.6)-(1.6) 2	20.0	180
	Cooked						
Sole Soleidae/Pleuronectidae	Fried	53.8	20.1	18.4	(7.7)	0	246
	Steamed	78.9	17.6	1.3	(2.2)	0	82
	Roe						
	Raw	71.0	20.7	4.6	1.2	2.5	129
	Muscle						
Spadefish <u>Chadtodipterus faber</u>	Raw	78.7	19.9	1.4	1.3	0	92
	Whole						
	Raw	76.7 73.8-79.6 2	15.1 13.4-16.8 2	4.5 2.8-6.2 2	3.2 3.2-3.3 2	0.5	119

Table 1.--Proximate composition of finfishes, whales, and products.

Common and Scientific Name	Description	Moisture	Protein	Fat	Ash	Carbo- hydrates ^{1/}	Calories ^{2/}
		%	%	%	%	%	Per 100 grams
Spadefish <u>Scatophagus argus</u>	Muscle Raw	76.5	17.8	2.7	1.4	1.6	102
		72.2-78.0 7	15.0-20.7 6	0.6-6.6 7	1.1-2.5 7		
Spot <u>Leiostomus xanthurus</u>	Muscle Raw	77.6	18.5	2.9	1.2	0	100
		77.5-77.7 2	17.1-19.1 2	2.7-3.1 2	1.1-1.2 2		
	Whole Raw	73.0	15.8	7.3	3.9	0	129
		63.9-81.8 11	13.3-17.9 11	0.9-16.5 11	3.4-5.1 11		
Sprat <u>Sprattus sprattus</u>	Offal Raw	68.9	14.8	10.6	4.6	1.1	159
	Muscle Raw	65.9	16.7	16.6	1.8	0	216
		61.3-69.7 3	16.5-17.1 4	3.0-20.6 4	1.5-2.0 3		
	Canned In Oil	50.2	18.6	29.3	2.0	0	338
	In Oil & Dried	0	37.3	59.4	5.2	0	684
		In Oil & Smoked	50.2	18.6	29.6	2.6	0
	In Tomato Sauce and Smoked	64.5	16.8	14.3	3.0	1.4	202
	Whole Raw	72.3	15.9	9.6	2.8	0	150
67.1-78.4 12		15.0-16.8 9	3.3-14.6 14	2.5-3.5 7			
Dried Cooked	(3.1)	55.8	33.2	7.9	0	522	
	Fried						
In Deep Fat	33.7	22.3	37.9	(6.1)	0	430	
	Grilled	45.8	25.1	23.2	(5.9)	0	309
Squawfish <u>Ptychocheilus grandes</u>	Muscle Raw	79.3	17.0	2.5	1.1	0	91
Squawfish <u>Ptychocheilus oregonensis</u>	Muscle Raw	78.7	17.3	3.0	1.1	0	96
	Offal Raw	69.5	16.0	10.4	5.9	0	158
Stargazer <u>Uranoscopus scaber</u>	Muscle Raw	78.7	17.3	0.3	1.1	2.6	82
Steenbras, Sand, Seebes <u>Lithognathus mormyrus</u>	Muscle Raw	75.2	19.4	1.3	1.4	5.7	112
Steenbras, White <u>Pagellus lithognotius</u>	Muscle Raw	74.3	20.3	2.6	2.4	0.4	106
		72.7-75.8 2	19.9-20.7 2	0.9-4.2 2	1.5-3.2 2		
Steenklipvis, Steenvis <u>Cheilodactylus fasciatus</u>	Muscle Raw	79.2	17.8	0.9	1.4	0.7	82

Table 1.--Proximate composition of finfishes, whales, and products.

Common and Scientific Name	Description	Moisture	Protein	Fat	Ash	Carbo- hydrates ^{1/}	Calories ^{2/}
		%	%	%	%	%	Per 100 grams
Stingray <u>Dasyatis pastinaca</u>	Muscle Raw	79.5	12.7	0.7	1.5	5.6	80
Stingray, Blue Spotted <u>Dasyatis kuhlii</u>	Muscle Raw	79.9 79.7-80.1 2	18.3	0.1	1.5	0.2	75
Stingray, Butterfly <u>Pteroplata altavela</u>	Muscle Raw	81.0	18.1	0.2	0.7	0	74
Stingray, Marbled <u>Dasyatis uarnak</u>	Muscle Raw	80.8 77.5-82.6 3	16.7 14.3-20.0 3	0.3 0.2-0.4 2	1.3 1.2-1.3 3	0.9	73
Stingray, Thornback <u>Dasyatis akajei</u>	Muscle Raw	79.8	20.4 19.0-21.8 2	1.0	2.3	0	91
Stingray Dasyatidae	Muscle Raw	78.2 75.5-81.0 6	18.5 16.1-24.5 7	0.5 0.2-0.6 4	1.0 0.7-1.7 4	1.8	86
Stockfish <u>Merluccius capensis</u>	Muscle Raw	77.3 69.8-81.2 3	18.5 16.8-21.8 3	2.3 0.8-5.4 3	2.1 1.2-3.0 2	0	95
	Salted	64.9	32.0	0.9	(2.2)	0	136
	Whole Dried	14.8	78.5	1.4	5.9	0	327
Stumpnose, Red <u>Pagrus gibbiceps</u>	Muscle Raw	76.4 75.5-77.2 2	20.6 20.0-21.1 2	1.2 1.0-1.3 2	1.5 1.4-1.5 2	0.3	94
	Dried	14.6	68.3	6.6	10.5	0	326
	Salted & Dried	10.5	62.2	4.0	23.3	0	285
Stumpnose, White <u>Sparus globiceps</u>	Muscle Raw	75.1	20.5	2.2	1.4	0.8	105
Sturgeon <u>Acipenser sturio</u>	Muscle Raw	79.2 77.8-80.9 3	16.3 14.2-18.0 3	3.0 0.6-6.2 5	1.4 0.8-1.8 3	0	92
	Roe Raw	44.0	30.0	19.7	6.3	0	297
Sturgeon, Lake <u>Acipenser fulvescens</u>	Muscle Raw	71.0	17.1	9.1	1.0	1.8	158
Sturgeon Acipenseridae	Muscle Raw	78.7	18.1	1.9	1.4	0	90
	Canned Dried	50.6	31.8	9.6	7.6	0.4	215
	Cooked Steamed	67.5	24.7 ³	5.7	2.1	0	150

Table 1.--Proximate composition of finfishes, whales, and products.

Common and Scientific Name	Description	Moisture	Protein	Fat	Ash	Carbo- hydrates ^{1/}	Calories ^{2/}
		%	%	%	%	%	Per 100 grams
	Roe						
	Raw	51.5	26.4	19.3	6.7	0	279
		46.0-57.0	25.8-26.9	15.0-23.6			
		2	2	3			
Sucker, Buffalo	Muscle						
<u>Ictiobus cyprinellus</u>	Raw	73.8	15.3	16.6	1.5	0	210
		68.6-79.0					
		2					
	Cooked						
	Unspecified	54.2	19.0	24.1	2.8	2.9	304
	Offal						
	Raw	55.5	15.6	23.1	4.4	1.4	276
Sucker, Carp	Muscle						
<u>Carpiodes meridionalis</u>	Raw	79.4	19.2	1.0	1.1	0	86
Sucker, Carp	Muscle						
<u>Carpiodes thompsoni</u>	Raw	76.2	19.3	3.1	1.2	0.2	105
Sucker, Common	Muscle						
<u>Catostomus commersoni</u>	Raw	80.0	17.7	1.5	1.4	0	84
		78.7-81.9	15.8-20.8	1.1-2.0	1.2-1.5		
		12	8	8	8		
	Whole						
	Raw	75.7	16.0	3.8	4.1	0.4	99
		75.3-76.0	15.7-16.3	3.2-4.3			
		2	2	2			
Sucker, Redfin	Muscle						
<u>Moxostoma aureolum</u>	Raw	79.3	18.0	3.3	1.6	0	102
		76.5-82.3	17.4-18.5	2.7-3.8	1.3-1.8		
		3	2	2	2		
Sucker	Muscle						
Catostomidae	Raw	78.3	17.7	3.5	1.1	0	102
		75.8-81.1	17.3-18.6	1.4-6.2	1.0-1.2		
		6	7	7	8		
	Offal						
	Raw	71.8	15.1	8.4	6.0	0	136
		70.0-73.5	14.5-15.6	7.8-8.9	4.4-7.5		
		2	2	2	2		
Sunfish, Bluegill	Whole						
<u>Lepomis macrochirus</u>	Raw	79.5	13.4	2.3	3.9	0.9	78
Sunfish, Crappie, White	Muscle						
<u>Pomoxis annularis</u>	Raw	81.8	16.8	0.8	1.0	0	74
Sunfish, Rock Bass	Muscle						
<u>Ambloplites rupestris</u>	Raw	79.0	19.0	0.9	1.1	0	84
Sunfish	Muscle						
Centrarchidae	Raw	78.4	20.4	1.7	1.2	0	97
		74.8-80.3	19.3-21.5	0.9-2.4	1.1-1.3		
		4	2	2	2		
	Cooked						
	Boiled	79.5	18.0	(1.5)	1.5	0	86
Surgeonfish	Muscle						
<u>Acanthurus bleekeri</u>	Raw	79.7	18.4	0.5	1.2	0.2	79
		79.4-79.8	17.4-19.2	0.4-0.6	1.1-1.3		
		3	3	3	2		
Swordfish	Muscle						
<u>Xiphias gladius</u>	Raw	74.5	19.4	4.4	1.4	0.3	118
		67.6-77.7	16.9-21.2	2.0-6.7	1.0-2.5		
		15	13	13	11		

Table 1.--Proximate composition of finfishes, whales, and products.

Common and Scientific Name	Description	Moisture	Protein	Fat	Ash	Carbo- hydrates ^{1/}	Calories ^{2/}
		%	%	%	%	%	Per 100 grams
	Canned	78.0	17.5	3.0	1.5	0	97
	Cooked						
	Baked						
	In Sour Cream	69.6	22.1	6.0	1.6	0.7	145
	Broiled						
	With Cheese	62.7	28.1	8.4	2.1	0	188
	Unspecified	64.8	28.1	5.9	1.5	0	166
		64.5-65.0	27.4-28.7	5.0-6.8	0.9-1.8		
		3	3	3	3		
	Kabobs	56.9	23.7	14.1	2.0	3.3	238
	With Mushrooms	57.1	21.7	17.7	2.0	1.5	252
Tarpon, Bidbid	Muscle						
<u>Elops hawaiiensis</u>	Raw	77.4	19.2	1.7	1.3	0.4	93
		76.7-78.4	18.7-19.6	0.3-1.6			
		3	3	3			
Tarpon, Buan-Buan	Muscle						
<u>Megalops cyprinoides</u>	Raw	76.4	19.8	2.3	1.3	0.2	101
		74.7-77.3	17.0-22.2	0.2-4.2	1.1-2.0		
		6	6	6	6		
Tarpon	Muscle						
Elopidae	Raw	77.3	19.1	5.3	0	0	124
		71.0-83.6					
		2					
	Smoked	61.2	26.7	6.3	5.2	0.6	164
		60.5-61.8					
		2					
Tench	Muscle						
<u>Tinca tinca</u>	Raw	79.2	16.6	1.0	1.1	2.1	84
		78.9-79.5	15.2-18.0	0.4-1.7			
		2	2	3			
Teraglin, Geelbeck	Muscle						
<u>Atractoscion acquidens</u>	Raw	76.9	20.1	2.5	1.4	0	103
				0.7-4.2			
				2			
Therapon	Muscle						
<u>Therapon plumbeus</u>	Dried	17.4	54.6	12.5	19.5	0	331
	Whole						
	Salted & Dried	26.6	38.9	3.7	26.8	4.0	205
Therapon, Grunt	Muscle						
<u>Therapon puta</u>	Raw	75.2	19.6	2.6	2.6	0	102
		75.0-75.4	19.4-19.7	2.5-2.8	2.5-2.8		
		2	2	2	2		
Therapon, Large Scaled, Banded Grunter	Muscle						
<u>Therapon theraps</u>	Raw	76.6	18.4	1.6	1.1	2.3	97
		75.2-78.3	17.2-22.2	0.6-2.9	0.7-1.4		
		4	4	4	4		
Therapon, Tigerfish	Muscle						
<u>Therapon jarbua</u>	Raw	77.6	19.0	0.3	1.3	1.8	86
Therapon	Muscle						
Theraponidae	Raw	77.9	20.0	1.1	1.4	0	90
		76.5-79.6	18.8-20.7	0.4-2.4	1.0-1.8		
		3	3	4	3		
Threadfin	Muscle						
<u>Galeoides decadactylus</u>	Raw	79.3	19.2	0.6	0.9	0	82

Table 1.--Proximate composition of finfishes, whales, and products.

Common and Scientific Name	Description	Moisture	Protein	Fat	Ash	Carbo- hydrates ^{1/}	Calories ^{2/}
		%	%	%	%	%	Per 100 grams
Threadfin <u>Pentanemus quinquarius</u>	Muscle Raw	79.4	19.2	0.7	0.7	0	83
Threadfin <u>Polynemus heptadactylus</u>	Muscle Raw	76.6	17.9	2.9	1.3	1.3	103
Threadfin <u>Polynemus indicus</u>	Muscle Raw	77.4	15.5	(5.8)	1.3	0	114
	Dressed Dried	14.3	66.8	4.7	10.5	3.7	324
Threadfin, Atlantic <u>Polydactylus octonemus</u>	Whole Raw	74.0 67.9-76.6 12	18.0 17.3-19.1 12	4.7 1.5-10.9 12	3.5 2.0-4.0 12	0	114
Threadfin, Four-rayed <u>Polynemus tetradactylus</u>	Muscle Raw	78.5 76.0-80.7 3	17.9 16.5-19.4 3	0.4 0.1-0.6 2	1.2 1.1-1.3 2	2.0	83
	Whole Fishmeal	0.9	85.1	7.1	6.9	0	404
Threadfin, Shiny-nose <u>Polydactylus quadrifilis</u>	Muscle Raw	78.3	19.8	0.3	1.6	0	82
Threadfin, Small-mouth <u>Polynemus microstoma</u>	Muscle Raw	75.4	19.7	0.2	1.1	3.6	95
Threadfin Polynemidae	Muscle Raw	76.1 70.9-78.2 7	20.2 19.1-21.0 6	1.1 0.4-2.0 6	1.4 1.2-2.2 7	1.2	96
	Dried	45.7 45.0-46.4 2	40.2	1.8	12.3 11.6-13.0 2	0	177
Tilapia, Mozambique Mouthbrooder <u>Tilapia mossambica</u>	Muscle Raw	77.4	18.5 17.1-19.7 3	2.4 1.9-2.8 2	1.0	0.7	98
Tilapia Cichlidae	Muscle Cooked Boiled	73.7 73.2-74.2 2	23.3 22.0-24.5 2	1.7 0.5-2.8 2	1.4 1.0-1.8 2	0	109
	Fried	8.2	39.4	39.4	13.0	0	512
	Dried	23.7	54.3	11.3	10.7	0	319
	Dried & Smoked	10.6	77.0	8.2	4.2	0	382
	Smoked	19.5 18.6-20.3 2	53.1	9.1	17.6	0.7	297
Tilefish <u>Branchiostegus japonicus</u>	Muscle Raw	78.2 77.8-78.6 2	17.8	2.8 2.4-3.1 2	2.2	0	96
Tilefish <u>Lopholatilus chamaeleonticeps</u>	Muscle Raw	80.3	18.6 17.5-19.8 2	1.2 0.5-1.8 2	1.4	0	85

Table 1.--Proximate composition of finfishes, whales, and products.

Common and Scientific Name	Description	Moisture	Protein	Fat	Ash	Carbo- hydrates ^{1/}	Calories ^{2/}
		%	%	%	%	%	Per 100 grams
Tilefish <i>Branchiostegidae</i>	Muscle						
	Raw	77.5	19.1	2.1	1.2	0	95
		77.0-77.9	18.7-19.5	2.0-2.2			
		2	2	2			
	Cooked						
	Casserole	73.1	12.3	6.5	2.1	6.0	132
	Patties	57.2	18.9	13.2	1.8	8.9	230
	Steak						
	Baked	71.6	24.5	3.7	1.1	0	131
	Broiled	67.0	26.1	5.1	1.8	0	150
	In Cheese Sauce	66.0	19.7	8.7	1.6	4.0	173
		63.3-68.7	16.1-23.3	7.8-9.6	1.4-1.7		
		2	2	2	2		
	In Egg Sauce	72.4	18.6	5.4	1.4	2.2	132
	Timbals	71.0	16.5	7.1	2.0	3.4	144
Tomcod <i>Gadidae</i>	Muscle						
	Raw	81.5	17.0	0.4	0.8	0.3	72
		81.5-81.5	16.9-17.2	0.2-0.6	0.4-1.0		
		3	3	3	3		
Tonguefish <i>Cynoglossidae</i>	Muscle						
	Raw	79.6	17.2	1.9	1.3	0	86
Torpedo, Panga <i>Megalaspis cordyla</i>	Muscle						
	Raw	75.6	20.4	1.6	1.2	1.2	101
		73.3-77.4	19.6-22.3	1.5-1.8	1.1-1.4		
		4	4	4	4		
Trevally, Great, Talakitok <i>Caranx sexfasciatus</i>	Muscle						
	Raw	75.6	20.2	2.5	1.3	0.4	105
		71.5-78.8	18.5-22.0	0.4-6.3	1.0-1.8		
		7	7	7	5		
	Dried	34.5	50.4	4.2	10.9	0	239
Trevally, Pennant <i>Alectis ciliaris</i>	Muscle						
	Raw	77.8	18.4	0.9	1.3	1.6	88
Triggerfish <i>Balistidae</i>	Muscle						
	Raw	79.8	18.4	0.8	1.7	0	81
Tripletail <i>Lobotes surinamensis</i>	Muscle						
	Raw	77.6	20.4	0.7	1.2	0	88
	Dried	24.9	55.3	5.2	10.3	4.3	285
Trout, Brook <i>Salvelinus fontinalis</i>	Muscle						
	Raw	77.0	18.5	1.6	1.0	1.9	96
		74.0-80.5	17.5-19.2	0.7-2.1	0.8-1.2		
		6	3	3	3		
	Canned	68.4	22.3	6.1	3.7	0	144
	Whole						
	Raw	75.2	15.6	5.2	3.4	0.6	112
		71.5-77.2	13.3-21.2	1.9-7.8	2.0-6.3		
		4	4	6	4		
Trout, Brown <i>Salmo trutta</i>	Muscle						
	Raw	77.5	18.5	2.9	1.5	0	100
		77.2-78.0	18.2-19.0	2.0-3.4			
		3	3	3			
Trout, Dolly Varden <i>Salvelinus malma</i>	Muscle						
	Raw	73.6	19.9	6.0	1.2	0	134
		73.1-74.1		5.4-6.5			
		2		2			

Table 1.--Proximate composition of finfishes, whales, and products.

Common and Scientific Name	Description	Moisture	Protein	Fat	Ash	Carbo- hydrates ^{1/}	Calories ^{2/} Per 100 grams
		%	%	%	%	%	
Trout, Lake <u>Salvelinus namaycush</u>	Muscle						
	Raw						
	High fat	42.6	10.2	50.0	0.6	0	491
		32.1-54.7	7.9-12.9	33.0-66.7	0.1-0.7		
		12	12	13	12		
	Low fat	72.9	17.2	11.1	1.2	0	169
		64.5-79.0	13.5-20.0	6.9-21.8	0.5-2.7		
		14	9	10	9		
	Whole						
	Raw						
Trout, Pollan <u>Coregonus pollan</u>	Low fat	60.8	17.8	17.1	1.8	2.5	235
	Offal						
	Raw	64.2	15.6	18.1	3.3	0	225
	Muscle						
	Cooked						
	Fried						
	Battered	64.3	18.7	12.1	(4.8)	0	185
	Steamed	77.1	18.1	2.1	(2.7)	0	91
	Whole						
	Raw						
Trout, Rainbow <u>Salmo gairdneri</u>	Muscle						
	Raw	72.0	20.7	6.8	1.3	0	154
		66.3-79.8	18.2-22.4	2.1-13.6	1.0-1.5		
		15	13	29	10		
	Canned	62.2	20.5	14.6	1.2	1.5	219
		57.7-66.8	19.6-21.4	9.0-20.1	1.2-1.2		
		5	5	5	5		
	Whole						
	Raw	71.6	18.9	9.3	2.7	0	159
		67.7-75.8	18.4-19.1	3.8-15.0	2.5-3.0		
Trout Salmonidae		5	3	6	4		
	Roe						
	Raw	62.9	27.8	9.0	1.6	0	192
		58.3-73.3	26.7-28.9	6.2-11.8	1.6-1.6		
		5	2	5	3		
	Muscle						
	Raw	76.4	17.7	3.8	1.1	1.0	109
		74.5-80.5	15.0-20.0	0.7-10.3	0.8-1.5		
		4	5	4	4		
	Canned	63.2	22.7	11.4	2.7	0	194
Tuna <u>Thunnus maccoyi</u>	Cooked						
	Steamed	73.2	20.5	3.9	1.5	0.9	121
		70.6-78.0	18.0-22.3	2.5-4.8			
		3	3	3			
	Muscle						
	Raw	70.7	25.0	2.0	1.4	0.9	122
				1.3-2.6			
				2			
	Muscle						
	Raw	60.6	21.8	11.8	1.1	0	193
Tuna <u>Thunnus orientalis</u>		52.5-68.6	20.9-22.6	2.4-26.4	1.0-1.1		
		2	3	3	2		
	Dried	20.8	77.6	1.2	5.2	0	321
	Muscle						
	Raw	67.6	25.2	6.3	1.4	0	158
		62.3-74.2	21.8-27.6	0.7-13.2	1.2-3.0		
		18	18	19	16		
	Dark meat	70.7	22.8	5.5	1.2	0	141
		68.6-78.9	22.0-24.0	2.6-8.4	1.2-1.3		
		7	7	7	7		
Tuna, Albacore <u>Thunnus alalunga</u>							
	Muscle						
	Raw	67.6	25.2	6.3	1.4	0	158
		62.3-74.2	21.8-27.6	0.7-13.2	1.2-3.0		
		18	18	19	16		
	Dark meat	70.7	22.8	5.5	1.2	0	141
		68.6-78.9	22.0-24.0	2.6-8.4	1.2-1.3		
		7	7	7	7		
	Muscle						
	Raw	67.6	25.2	6.3	1.4	0	158

Table 1.--Proximate composition of finfishes, whales, and products

Common and Scientific Name	Description	Moisture	Protein	Fat	Ash	Carbo- hydrates ^{1/}	Calories ^{2/}
		%	%	%	%	%	Per 100 grams
Tuna, Albacore <i>Scombridae</i>	Canned In Oil	57.7 52.9-62.4 2	26.1 24.8-27.4 2	6.1 1.9-8.3 3	2.8 2.7-2.8 2	7.3	189
	Offal						
	Fishmeal	7.0	53.8	12.9	(26.3)	0	331
	Muscle Raw	77.3 75.6-78.4 4	18.8 17.9-19.6 2	3.0 1.9-4.1 4	1.1 0.9-1.2 2	0	102
Tuna, Big Eye <i>Thunnus obesus</i>	Muscle Raw						
	Dark meat	72.5 71.4-73.6 2	21.3 16.1-26.5 2	2.4 1.3-3.5 2	1.3 1.2-1.4 2	2.5	116
	Light meat	73.2 71.4-75.6 4	24.2 22.5-26.5 4	1.5 0.6-2.6 5	1.2 1.0-1.4 4	0	110
Tuna, Bluefin <i>Thunnus thynnus</i>	Muscle Raw						
	Dark meat	67.6 52.7-74.7 5	23.5 21.4-25.3 5	8.5 0.2-25.0 6	1.3 0.9-1.5 5	0	171
	Light meat	69.7 58.5-73.5 17	24.5 20.3-27.0 17	5.0 0.5-14.1 18	1.3 1.2-1.6 15	0	143
	Canned In Oil	53.2 52.8-53.5 2	22.1 19.4-25.0 4	28.1 20.0-42.3 4	2.8 2.1-3.2 3	0	341
Tuna, Skipjack <i>Euthynnus pelamis</i>	Muscle Raw	68.9 60.7-72.1 18	24.9 21.3-27.3 19	4.5 0.2-11.0 18	1.4 1.0-1.7 13	0.3	141
	Cooked Broiled	59.0 57.6-60.4 2	33.2 31.7-34.9 3	3.2 2.6-4.1 3	2.1 2.0-2.1 2	2.5	172
	Fried Breaded	58.6 29.6	30.2 60.2	6.7 4.8	1.6 4.4	2.9 1.0	193 288
	Dried	15.3-39.6 3	51.5-75.6 3	3.1-6.2 3	2.7-6.6 3		
	Smoked	34.4	44.0 33.0-55.0 2	1.5 1.4-1.5 2	7.7	12.4	239
	Canned In Brine	64.9 63.1-66.7 2	25.9 24.0-27.8 2	3.2 2.8-3.6 2	3.5 2.4-4.6 2	6.0	161
	In Oil	62.9	29.0	5.7 4.8-6.5 2	3.0	0	167
	Dressed Dried	16.0	56.6	5.3	25.7	0	274
	Muscle Raw	73.0 70.0-76.0 2	23.7 22.0-25.4 2	4.1 2.8-6.5 4	1.3	0	132
	Dried	14.3	75.6	5.1	4.0	1.0	352
	Half Dried	39.0	51.5	6.2	2.7	0.6	264

Table 1.--Proximate composition of finfishes, whales, and products.

Common and Scientific Name	Description	Moisture	Protein	Fat	Ash	Carbo- hydrates ^{1/}	Calories ^{2/}
		%	%	%	%	%	Per 100 grams
Tuna, Yellowfin <i>Thunnus albacares</i>	Whole Fishmeal	9.3	52.5	11.0	(27.2)	0	309
	Muscle Raw						
	Dark meat	70.6	23.4	4.1	1.7	0.2	131
		70.4-70.7	23.3-23.6	3.7-4.6	1.6-1.8		
		3	3	3	3		
	Light meat	73.2	24.3	1.9	1.4	0	114
		64.4-75.8	21.8-26.2	0.1-11.9	1.0-1.9		
		32	31	30	30		
	Canned In Oil	72.4	27.0	6.8	2.4	0	169
		59.9-65.3	22.9-29.0	3.0-15.2	1.9-2.7		
		3	3	5	3		
	In Water	70.6	22.9	2.9	2.7	0.9	136
		63.8-74.8	21.6-24.0	0.8-5.8	1.1-3.7		
		3	3	3	3		
	Cooked Broiled With Soy Sauce	62.1	33.8	0.2	2.6	1.3	142
	Salted & Dried	22.5	49.5	4.0	24.3	0	234
Tuna Scombridae	Muscle Raw						
		71.4	24.7	5.1	1.3	0	145
		66.0-78.5	21.3-27.3	0.2-13.0	1.0-1.9		
		4	4	5	4		
	Canned	67.4	27.4	6.5	2.9	0	168
		63.8-70.5	22.2-29.4	3.9-8.8	1.5-5.0		
		5	6	5	4		
	In Brine	69.6	28.7	3.0	6.6	0	142
		62.0-77.1	28.4-29.0	2.0-4.0	5.0-8.2		
		2	2	2	2		
	In Oil	54.3	25.3	17.1	2.4	0.9	259
		47.9-61.0	18.8-29.1	8.2-27.7	1.7-3.5		
		12	16	17	12		
	In Water	68.5	27.2	2.3	1.9	0	130
			25.6-29.4	0.4-7.6	1.4-2.2		
			3	4	3		
	Creamed	63.6	10.8	18.0	1.4	6.2	230
	Tuna Supreme	63.5	13.3	11.0	11.9	0.3	153
	Cooked Baked						
	In Spanish Sauce	74.7	17.0	3.8	1.3	3.2	115
	Boiled	58.5	27.0	13.0	1.5	0	225
	Served with Egg Sauce	67.9	22.2	6.1	1.5	2.3	153
	Broiled	57.6	34.9	4.1	2.0	1.4	182
	Cakes	62.5	12.8	11.3	1.4	12.0	201
	Chowder						
	Manhattan	82.3	8.3	4.0	1.3	4.1	86
	New England	80.8	10.0	3.6	0.9	4.7	91
	Croquettes	53.0	18.3	14.4	1.7	12.4	252
	Fried						
	Breaded	58.6	30.2	6.7	1.6	2.9	193
	Noodle Casserole	71.2	8.9	5.9	1.5	12.5	139
	Pie	68.0	9.5	7.5	2.1	12.6	156
	Salad	69.8	14.6	12.1	10.5	0	167
		68.1-71.5	14.0-15.2	8.9-15.2	8.9-12.1		
		2	2	2	2		
	Shepherd's Pie	71.2	8.6	6.9	2.1	11.2	141
	Slaw	74.0	11.5	9.3	9.3	0	130
	Steaks-Stuffed	58.1	21.7	9.1	2.1	9.0	204
	With Creole Sauce	75.4	15.4	3.8	1.7	3.7	111

Table 1.--Proximate composition of finfishes, whales, and products.

Common and Scientific Name	Description	Moisture	Protein	Fat	Ash	Carbo- hydrates ^{1/}	Calories ^{2/}
		%	%	%	%	%	Per 100 grams
	Dried	33.9	53.5	3.1	6.6	2.9	254
	Dried & Smoked	34.4	55.0	1.4	7.7	1.5	239
	FPC	6.6	81.6	0.5	0.8	10.5	373
	Whole						
	Fishmeal	6.1	60.9	9.7	21.0	2.3	340
		4.2-6.7	59.6-65.3	7.0-11.9	19.8-23.3		
		5	5	4	4		
Tunny	Muscle						
<u>Thunnus vulgaris</u>	Raw	65.5	24.3	6.4	1.4	2.4	164
		65.4-65.5	20.7-26.7	1.8-13.1	1.2-1.6		
		2	3	3	3		
	Canned						
	In Oil	51.3	23.8	20.0	4.3	0.6	278
Tunny, Little	Muscle						
<u>Euthynnus alletteratus</u>	Raw	74.1	22.9	4.0	1.7	0	134
			22.3-23.5	1.6-9.3	1.4-2.0		
			5	5	5		
	Dressed						
	Raw	(70.1)	22.8	5.6	1.5	0	141
Turbot	Muscle						
<u>Reinhardtius hippoglossoides</u>	Raw	75.3	13.2	11.6	0.9	0	157
				10.8-12.4			
				2			
Turbot, Arrowtooth	Muscle						
<u>Atheresthes stomias</u>	Raw	78.1	16.2	4.8	1.1	0	108
		74.6-79.7	13.8-17.9	2.4-9.3	1.0-1.2		
		4	4	4	4		
Turbot, Greenland	Muscle						
<u>Atheresthes evermanni</u>	Raw	78.9	16.9	3.5	1.0	0	99
Turbot	Muscle						
Pleuronectidae	Raw	75.6	15.3	9.7	1.1	0	149
		70.2-82.4	12.4-18.1	1.4-15.6	0.7-1.3		
		7	6	6	4		
	Cooked						
	Unspecified	75.6	20.7	1.6	(2.1)	0	97
	Smoked	74.6	13.4	8.8	3.7	0	133
Viperfish	Muscle						
<u>Chauliodus sloani</u>	Raw	85.8	12.6	0.1	0.8	0.7	54
Wahoo	Muscle						
<u>Acanthocybium solanderi</u>	Raw	77.8	22.9	1.5	1.1	0	105
			21.6-24.1	0.7-2.3			
			2	2			
Walleye	Muscle						
<u>Stizostedion vitreum vitreum</u>	Raw	78.8	19.7	1.2	1.3	0	90
		76.6-79.7	18.6-22.1	0.5-1.8	1.1-1.5		
		5	5	5	5		
Weakfish	Muscle						
<u>Cynoscion petronus</u>	Raw	77.7	19.7	1.5	1.1	0	92
	Whole						
	Raw	76.5	19.3	5.3	3.1	0	125
		76.3-76.6	19.0-19.5	2.6-7.9	2.9-3.2		
		2	2	2	2		
Weakfish	Muscle						
<u>Larimus peli</u>	Raw	78.8	19.5	0.6	1.1	0	83
Weever, Greater	Muscle						
<u>Trachinus draco</u>	Raw	76.0	19.4	0.7	1.4	2.5	94

Table 1.--Proximate composition of finfishes, whales, and products.

Common and Scientific Name	Description	Moisture	Protein	Fat	Ash	Carbo- hydrates ^{1/}	Calories ^{2/}
		%	%	%	%	%	Per 100 grams
Weever, Lesser <u>Trachinus vipera</u>	Muscle Raw	71.1	22.4	5.6	1.3	0	140
Weever Trachinidae	Muscle Raw	79.6 74.9-84.2 2	16.5 13.7-19.2 2	2.2 0.8-3.6 2	1.5 0.7-2.3 2	0.2	87
Whale, Fin <u>Balaenoptera phepaleus</u>	Whole Fishmeal	6.8	54.8	3.7	30.8	3.9	268
Whale, Sperm <u>Physeter catodon</u>	Whole Fishmeal	6.0	61.0	2.7	26.7	3.6	283
Whale Unspecified	Muscle Raw	68.8 62.9-72.8 9	21.9 16.2-27.4 7	7.1 2.1-18.5 9	1.1 0.8-1.3 6	1.1	156
	Fishmeal	7.9 7.3-8.6 5	74.3 53.0-86.0 5	7.7 4.0-16.9 5	6.0 3.2-13.2 4	4.1	383
	Whole Raw	47.9	18.9	26.7	6.5	0	316
Whitefish, Lake <u>Coregonus clupeaformis</u>	Muscle Raw	72.9 65.6-79.0 11	18.5 17.2-19.8 12	7.2 1.7-16.3 13	1.2 1.0-1.4 12	0.2	140
	Offal Raw	62.6	16.1	18.5	3.1	0	231
Whitefish Salmonidae	Muscle Raw	75.1 69.8-79.8 10	18.6 15.1-22.9 8	5.2 3.2-8.5 8	1.4 1.1-1.6 6	0	121
	Whole Raw	69.9 9.1	22.2 65.9	6.5 4.3	1.5 22.0	0	147
	Fishmeal	6.5-13.4 3	57.2-70.4 6	1.9-7.5 3	20.9-23.4 4	0	302
Whiting, Australian <u>Sillago sihama</u>	Muscle Raw	76.0 73.8-77.8 7	19.6 18.2-20.4 7	1.4 0.4-5.7 8	1.5 0.8-2.1 7	1.5	97
Whiting, Blue <u>Micromesistius poutassou</u>	Muscle Raw	79.6 78.6-80.5 2	18.1	0.8	1.2	0.3	81
Whiting, King <u>Menticirrhus saxatilis</u>	Muscle Raw	79.2 76.3-81.7 4	17.1 16.5-17.9 4	2.6 0.7-6.1 4	1.1 1.0-1.1 4	0	92
	Offal Raw	74.4 70.6-80.6 4	15.0 14.0-16.5 4	6.0 1.1-11.0 4	3.8 3.4-4.5 4	0.8	129
Whiting, Sand <u>Sillago ciliata</u>	Muscle Raw	76.0	21.3	1.2	1.4	0	96

Table 1.--Proximate composition of finfishes, whales, and products.

Common and Scientific Name	Description	Moisture	Protein	Fat	Ash	Carbo- hydrates ^{1/}	Calories ^{2/}
		%	%	%	%	%	Per 100 grams
Whiting <i>Sillaginidae</i>	Muscle Raw	77.8 74.0-83.0 14	18.9 16.0-21.3 12	1.3 0.4-5.7 15	1.4 0.8-2.1 11	0.6	90
Windtog <i>Pterosmaris (Carsio) axillaris</i>	Muscle Raw	78.2	18.6	1.8	1.5	0	91
Wolffish, Atlantic <i>Anarhichas lupus</i>	Muscle Raw	80.6 78.1-84.0 3	17.6 16.0-18.5 3	2.8 2.1-3.0 4	1.2	0	96
Wrasse <i>Crenilabrus mediterraneus</i>	Muscle Raw	80.0	18.3	0.9	1.4	0	81
Wrasse <i>Crenilabrus melops</i>	Muscle Raw	79.2	16.9	1.4	2.6	0	80
Wrasse <i>Labrus viridis</i>	Muscle Raw	80.2	18.3	0.9	1.2	0	81
Wrasse, Ballan <i>Labrax bergylta</i>	Muscle Raw	73.6 73.5-73.6 2	18.2 17.7-18.7 2	4.2 2.0-6.2 3	2.7 2.3-3.1 2	1.3	116
Wrasse, Bass <i>Labrax (Roccus) lupus</i>	Muscle Raw	78.2 77.1-78.8 3	18.2 16.5-19.2 4	1.4 1.2-1.5 4	1.3 1.2-1.5 4	0.9	89
Wrasse, Peacock <i>Crenilabrus pavo</i>	Muscle Raw	79.6 77.2-82.0 2	19.4 16.2-22.6 2	0.8 0.4-1.1 2	1.2 1.1-1.3 2	0	85
Wrasse, Pintade <i>Coris gioffredi</i>	Muscle Raw	76.0	18.9	1.4	2.7	1.0	92
Wrasse, Rainbow <i>Jules jules</i>	Muscle Raw	79.1 78.0-80.1 2	18.3 18.1-18.4 2	1.4 1.1-1.6 2	1.7 1.3-2.1 2	0	86
Wrasse, Spinola <i>Labrus turdus</i>	Muscle Raw	78.6 77.5-79.7 2	18.5	1.2	1.3	0.4	86
Wrasse, Tautog <i>Tautoga onitis</i>	Muscle Raw	80.0	18.3	0.2	1.4	0	75
Wrasse <i>Labridae</i>	Muscle Raw	77.7	18.5	2.0	1.8	0	92
Wreckfish <i>Polyprion cernium</i>	Muscle Raw	76.7	17.5 15.6-19.3 2	4.0 1.3-6.7 2	1.1	0.7	109
Wreckfish, Black Bass <i>Polyprion americanus</i>	Muscle Raw	77.1 74.5-79.9 3	17.4 17.0-17.7 3	3.9 1.0-6.7 3	1.0 0.8-1.1 3	0.6	107

^{1/} This value was obtained by difference if the average of the means.^{2/} Caloric value estimated by multiplying protein content by 4; fat by 9; and carbohydrate by 4.^{3/} Average of the means obtained from the literature cited.^{4/} Range of the means found in literature cited.^{5/} Number of mean values, which were reported in the literature cited.^{6/} Figure obtained by calculation.^{7/} FPC abbreviation for fish protein concentrate.^{8/} Method of processing was not clearly described or the fish was identified only by common name.

Table 2.--Proximate composition of crustaceans and products.

Common and Scientific Name	Description	Moisture %	Protein %	Fat %	Ash %	Carbohydrates ^{1/} %	Calories ^{2/} Per 100 grams
Crab <u>Polybus henslowi</u>	Whole Raw	75.5	10.8	1.7	8.9	3.1	71
Crab <u>Portunus sanguinalatus</u>	Muscle Raw	79.9	15.5	0.5	0.6	3.5	81
Crab <u>Portunus trituberculatus</u>	Muscle Raw	82.1 ^{3/} 80.2-83.3 ^{4/} 35/	16.3 ^{3/} 12.6-19.0 ^{4/} 32/	0.3 ^{3/} 0.1-0.4 ^{4/} 32/	1.4 ^{3/} 1.0-1.6 ^{4/} 22/	0	68
Crab, Blue <u>Callinectes sapidus</u>	Muscle Raw	80.3 77.4-86.7	15.9 8.6-19.8	1.3 0.4-2.2	1.9 1.3-2.7	0.6	78
	Canned	18 77.6 76.1-79.0 2	13 18.4 18.0-18.7 2	19 0.3	12 2.8	0.9	82
	Cooked Steamed	77.1	18.4	2.5	2.0	0	96
	Offal Raw	67.5	12.4	1.5	10.8	7.8	94
	Meal	5.8 4.4-8.2 5	34.6 24.0-58.4 5	2.2 2.0-2.7 4	39.7 20.5-56.0 5	17.7	229
	Roe Raw	75.5	8.5	9.6	2.0	4.4	138
Crab, Blue, Deep Sea <u>Portunus pelagicus</u>	Muscle Raw	77.6 75.5-79.8 4	16.1 11.5-19.9 4	1.8 0.5-4.5 3	2.3 1.9-2.6 3	2.2	89
Crab Portunidae	Muscle Raw	76.8	17.9	2.0	2.0	1.3	95
	Canned	75.3	16.0	3.3	1.6	3.8	109
	Salted	60.2	18.3	4.3	16.0	1.2	117
	Roe Salted	38.3	31.4	6.4	9.4	14.5	241
Crab, Chinese <u>Eriocheia sinensis</u>	Muscle Raw	80.0	13.1	2.8	(4.1) ^{6/}	0	78
	Offal Meal	6.8	35.9 33.0-38.1 3	3.9 3.0-4.6 3	39.7 38.8-41.0 3	13.7	234
Crab, Dungeness <u>Cancer magister</u>	Muscle Raw	80.0 78.1-82.3 22	17.3 13.8-23.4 20	1.3 0.8-3.0 24	1.5 1.2-2.0 17	0	81
	Canned In Brine	77.6 76.6-78.5 6	18.5 16.8-20.5 6	1.0 0.9-1.2 6	2.4 2.1-2.8 6	0	83
	In Water	78.4 76.6-82.9 7	18.8 14.7-21.3 7	1.4 1.1-3.0 7	1.4 1.0-1.7 7	0	88
	Cooked Steamed	77.3 76.3-78.1 5	19.6 17.6-20.8 5	1.0 0.9-1.3 5	2.3 1.4-3.0 5	0	87
	Offal Raw	56.9 53.2-61.2 5	14.0 13.4-14.7 5	0.8 0.5-1.5 5	15.3 14.4-16.3 5	13.0	115

Table 2.--Proximate composition of crustaceans and products.

Common and Scientific Name	Description	Moisture %	Protein %	Fat %	Ash %	Carbohydrates ^{1/} %	Calories ^{2/} Per 100 grams
Crab, Edible <u>Cancer pagurus</u>	Muscle Raw	77.4	17.6	1.4	3.5	3.6	97
		75.3-79.5 2	16.0-19.2 2	1.3-1.5 2			
Crab, Jonah <u>Cancer borealis</u>	Muscle Raw	78.2	16.2	1.9	1.5	2.2	91
Crab, King <u>Paralithodes camtschatica</u>	Muscle Raw	81.9	15.2	0.8	1.5	0.6	70
		76.0-87.4 19	9.6-20.0 21	0.3-2.5 19	1.3-1.7 18		
	Canned	77.1	18.5	1.6	2.2	0.6	91
		75.3-75.9 4	17.5-19.7 3	0.5-2.6 3	1.5-3.3 3		
	Cooked Unspecified ^{7/}	77.6	17.8	1.7	1.9	1.0	86
		76.2-79.5 7	15.1-20.7 7	0.4-3.3 6	1.3-1.9 7		
	Offal						
Crab, Necora, Cangrejos <u>Cancer polydon</u>	Raw	83.4	7.9	1.5	5.4	1.8	52
	Meal	4.7	39.8	7.4	31.1	17.0	294
		4.7-4.7 2	39.7-39.9 2	4.7-10.1 2	26.6-35.7 2		
	Cooked Baked	70.0	18.2	1.7	8.8	1.3	93
Crab, Queen <u>Chionoectes opilio</u>	Muscle Raw	81.5	15.6	1.0	1.9	0	71
		80.6-82.9 3	15.3-16.0 3	0.9-1.1 3	1.7-2.1 3		
	Canned	82.5	14.2	1.1	2.0	3.0	69
Crab, Red <u>Pleuroncodes planipes</u>	Muscle Raw	80.0	8.2	1.6	4.0	6.2	72
Crab, Red <u>Podapnehalmus vigil</u>	Cooked Unspecified	80.6	15.8	0.4	2.6	0.6	69
		80.0-81.1 3	14.7-16.7 3	0.3-0.4 3	2.3-3.0 3		
Crab, Red, Deep Sea <u>Geryon quinquedens</u>	Muscle Raw	80.8	15.0	1.0	1.6 1.4-1.8 2	1.6	75
Crab, Samoan <u>Scylla serrata</u>	Muscle Raw	78.3	17.3	2.9	1.8	0	102
		75.1-81.0 5	14.2-20.1 5	0.7-4.0 3	1.5-1.9 4		
Crab, Sand <u>Platyonichus ocellatus</u>	Muscle Raw	76.3	20.3	0.2	1.8	1.4	90
Crab, Snow <u>Chionoectes bairdi</u>	Muscle Raw	79.7	18.4	1.3	1.2	0	85
		79.4-80.0 2	18.0-18.8 2	1.0-1.5 2	1.0-1.3 2		
	Canned	78.2	19.5	1.0	1.6	0	87
Crab, Spider <u>Fulvia muticum</u>	Muscle Raw	72.0	23.0	2.2	1.8	1.0	105

Table 2.--Proximate composition of crustaceans and products.

Common and Scientific Name	Description	Moisture %	Protein %	Fat %	Ash %	Carbohydrates ^{1/} %	Calories ^{2/} Per 100 grams
Crab, Swimming <u>Portunus puber</u>	Muscle						
	Raw	67.3 66.1-73.1 2	16.2	1.0	4.2	11.3	119
Crab, Tanner <u>Chionoectes tanneri</u>	Muscle						
	Raw	80.0 78.6-81.4 5	19.5 17.7-20.7 5	1.4 1.0-1.6 3	1.0 0.4-1.3 5	0	91
	Canned	78.4 77.7-79.1 2	19.3 18.9-19.7 2	1.5 1.3-1.7 2	1.6 1.5-1.7 2	0	91
	Cooked						
	Unspecified	81.5	16.0	0.3	1.8	0	67
Crab Potamonidae	Muscle						
	Raw	73.2 68.1-78.4 2	13.1 12.4-13.8 2	3.4 2.9-3.8 2	4.6 3.1-6.2 2	5.8	106
	Salted	65.9	11.3	7.0	11.8	4.0	124
Crab Unspecified	Muscle						
	Raw	77.1 69.1-84.7 23	16.2 7.2-22.9 20	2.6 0.7-12.5 21	2.0 1.0-3.4 18	2.1	97
	Canned	77.9 76.0-81.5 7	17.8 15.1-21.8 10	1.6 0.3-2.9 10	2.1 1.8-2.6 6	0.6	68
	Cooked						
	Appetizer	61.8	15.7	12.5	2.3	7.9	205
	Baked	69.6	12.8	10.6	2.3	4.7	165
	Bisque	80.8	8.8	4.7	1.8	3.9	95
	Boiled	72.5	19.2	5.2	3.1	0	127
	Cakes	62.8 60.9-64.6 2	17.4 16.4-18.4 2	11.3 9.8-12.8 2	2.2 2.0-2.3 2	6.3	195
	Canapes	57.3	17.0	10.4	2.7	12.6	210
	Casserole	69.9 64.7-75.0 2	11.6 11.3-11.9 2	9.7 4.9-14.4 2	1.9 1.7-2.0 2	7.1	160
	Chowder	83.7	4.5	3.7	1.2	6.9	80
	Deville	58.2 53.1-63.3 2	11.1 10.7-11.4 2	10.7 9.4-13.2 3	2.8 2.6-2.9 2	17.2	210
	Fried-Softshell	48.8	16.4	18.4	3.1	13.3	285
	Imperial	71.9	14.6	7.6	2.0	3.9	140
	Jambalaya	79.5	8.2	4.4	1.3	6.6	100
	Jellied	75.2	9.4	7.3	1.8	6.3	130
	Mousse	77.8	10.4	9.0	1.2	1.6	130
	Newberg	66.3	13.7	12.2	2.0	5.8	190
	Potato Cake	72.7	11.1	5.7	2.0	8.5	130
	Puff	72.3	12.1	11.4	1.7	2.5	160
	Puff Shell	57.5	11.1	17.9	2.9	10.6	250
	Ravigote	75.1	12.4	6.1	2.6	3.8	120
	Salad						
	Aspic	81.9	8.4	4.6	1.8	3.3	90
	Avocado	74.8 70.9-78.6 2	7.6 6.8-8.3 2	12.3 11.0-13.5 2	1.6 1.3-2.0 2	3.8 2.3-5.3 2	155
	Sandwich						
	Barbecue	51.9	10.1	9.9	2.9	25.2	230
	Hot	52.2	10.4	12.3	2.5	22.6	245
	Souffle	70.0	13.3	8.9	2.5	5.3	155
	Soup						
	Cream	82.7	7.2	3.7	1.6	4.8	80
	Creole	84.5	6.3	3.0	1.6	4.6	70
	Stew	81.2	8.4	4.3	1.9	4.2	90
	Tomato						
	Stuffed	77.7	11.3	8.4	2.1	0.5	125
	With Eggs	75.2	9.4	7.9	1.5	6.0	135
	Paste	68.2 66.7-69.7 2	17.2 15.6-18.8 2	6.9 5.2-8.6 2	2.9 2.6-3.2 2	4.8	150

Table 2.--Proximate composition of crustaceans and products.

Common and Scientific Name	Description	Moisture %	Protein %	Fat %	Ash %	Carbohydrates ^{1/} %	Calories ^{2/} Per 100 grams
	Salted	55.1 50.0-60.2 2	15.2 12.2-18.3 2	2.4 0.6-4.3 2	26.2 16.0-36.4 2	1.1	87
	Offal Meal	8.0 6.0-12.0 12	33.9 27.8-41.1 14	3.0 0.8-8.1 13	35.7 23.8-41.6 9	19.4	240
	Roe Salted	38.3	31.4	6.4	9.4	14.5	241
Crayfish <u>Astacus fluviatilis</u>	Whole Raw	81.0	16.0	0.5	(1.5)	1.0	72
Crayfish, Fresh Water <u>Procambarus clarkii</u>	Whole Meal	6.1	43.1	5.2	30.4	15.2	280
Crayfish Unspecified	Muscle Raw	80.3 72.1-83.4 11	16.3 11.9-24.1 14	0.7 0.5-2.5 9	1.5 0.7-3.6 8	1.2	76
	Cooked Boiled	75.0	19.4	0.8	4.4	0	85
	Whole Meal	9.4	44.7	5.7	26.4	13.8	285
Lobster <u>Homarus vulgaris</u>	Muscle Raw	73.1 65.1-78.5 5	18.2 15.3-20.2 4	1.5 1.4-2.0 4	1.8 1.6-2.0 2	5.4	108
Lobster, European <u>Homarus gammarus</u>	Muscle Raw	75.1	19.9	0.6	1.8	2.6	95
Lobster, Spiny <u>Panulirus argus</u>	Muscle Raw	70.0 64.3-75.6 2	19.2 15.3-23.1 2	7.5 0.3-14.6 2	1.6 1.5-1.7 2	1.7	151
Lobster, Spiny <u>Panulirus vulgaris</u>	Muscle Raw	73.8	15.3	1.3	2.0	7.6	103
Lobster, Spiny Unspecified	Muscle Raw	76.0 73.7-78.3 2	18.7 17.9-19.5 2	1.4	1.3 1.2-1.4 2	2.6	98
Lobster Unspecified	Muscle Raw	78.4 71.5-84.3 14	17.6 14.5-21.6 24	1.4 0.6-1.9 14	2.1 1.4-3.4 8	0.5	85
	Canned	75.9 71.9-79.2 6	18.4 16.4-20.2 8	1.3 0.8-1.8 9	2.5 1.1-3.6 6	1.9	93
	Cooked Boiled	72.4	21.2	3.4	(2.0)	(1.0)	119
	Newberg Salad	64.0 80.3	18.5 10.1	10.6 6.4	1.8 0.9	5.1 2.3	190 105
	With Black Bean Sauce	70.9	13.7	7.0	2.9	5.2	139
	With Mushroom Sauce	74.6	9.2	7.2	1.6	7.1	130
	Dried	14.5	56.8	21.0	6.1	1.6	423
	Paste	68.8	15.5	9.8	3.1	3.0	162
Shrimp <u>Cyprhiops caementarius</u>	Muscle Raw	76.1	17.8	0.2	1.4	4.5	91
Shrimp <u>Penaeus caramote</u>	Muscle Raw	70.8	25.1	1.6	2.1	0.4	116

Table 2.--Proximate composition of crustaceans and products.

Common and Scientific Name	Description	Moisture %	Protein %	Fat %	Ash %	Carbohydrates ^{1/} %	Calories ^{2/} Per 100 grams
Shrimp <u>Penaeus incisipes</u>	Muscle Raw	75.6	18.9	1.7	1.4	2.4	100
Shrimp <u>Penaeus membranaceus</u>	Muscle Raw	81.2	9.4	0.9	1.4	7.1	74
Shrimp <u>Penaeus semisulcatus</u>	Muscle Raw	76.7	20.8	0.7	1.5	0.3	91
Shrimp <u>Trachypenaeus asper</u>	Muscle Raw	78.6	18.7	0.8	1.2	0.7	85
Shrimp, Bagda <u>Palaemon carcinus</u>	Muscle Raw	73.0	18.8	1.6	2.1	4.5	108
Shrimp, Brine <u>Artemia salina</u>	Whole Raw	90.0	4.3	5.1	2.1	0	63
	Dried	22.2	40.2	6.2	31.6	0	217
		11.3-33.2 2	22.0-58.5 2	1.8-10.6 2	20.6-42.5 2		
Shrimp, Brown <u>Penaeus aztecus</u>	Muscle Raw	76.2 75.6-76.8 2	21.8	0.8 0.6-1.1 2	1.6	0	94
	Muscle With Vein Raw	75.6	20.5	1.4	3.0	0	95
	Offal Raw	73.5	15.7	2.6	5.2	3.0	98
Shrimp, Fresh Water Unspecified	Muscle Cooked						
	Boiled	73.0	19.0	1.6	3.5	2.9	102
	Dried	12.5	57.5	6.5	17.5	6.0	313
	Paste	40.7	19.5	1.8	34.6	3.4	160
	Salted & Dried	23.0	59.8	3.0	13.5	0.7	269
	Soaked & Drained	76.6	18.2	0.9	4.1	0.2	82
	Muscle With Vein Raw	77.9	8.3	0.3	2.3	11.2	81
	Whole Raw	79.0	16.2	1.3	3.0	0.5	78
Shrimp, Gamba <u>Penaeus longirostris</u>	Muscle Raw	78.2	19.2	0.6	1.8	0.2	83
Shrimp, Indian <u>Oedong kring</u>	Whole Dried	19.0	74.4	3.2	6.4	0	326
Shrimp, Indian <u>Peneopsis dobsonii</u>	Muscle Raw	78.9	18.0	0.4	1.7	1.0	80
Shrimp, Indian <u>Selenocera subnuda</u>	Whole Dried	8.3	83.3	2.6	9.4	0	357
Shrimp, Indian <u>Squilla oratorio</u>	Muscle Raw	79.1 74.4-83.8 2	15.6 12.7-18.5 2	2.8 1.1-4.6 2	1.7 1.6-1.8 2	0.8	91
Shrimp, Indian Prawn <u>Penaeus sculptilis</u>	Muscle Raw	75.0	16.2	0	1.6	0	71
Shrimp, Indian Prawn <u>Penaeus styliiferus</u>	Muscle Raw	77.6	18.3	0	1.9	0	81

Table 2.--Proximate composition of crustaceans and products.

Common and Scientific Name	Description	Moisture %	Protein %	Fat %	Ash %	Carbohydrates ^{1/} %	Calories ^{2/} Per 100 grams
Shrimp, Jumbo <u>Penaeus monodon</u>	Muscle						
	Raw	77.0 75.6-78.5 2	19.2 17.6-20.8 2	0.6 0.4-0.7 2	1.4 1.3-1.5 2	1.8	89
Shrimp, Opossum, Kuruma <u>Penaeus japonicus</u>	Muscle With Vein						
	Raw	78.0	15.0	3.3	2.8	0.9	93
	Dried	27.8	49.1	6.8	14.1	2.2	266
Shrimp, Pink <u>Penaeus duorarum</u>	Muscle						
	Raw	77.9	20.2	0.7	1.7	0	87
Shrimp, Pink, Maine <u>Pandalus borealis</u>	Muscle						
	Raw	80.8 80.1-81.5 2	19.4 17.1-21.1 2	0.6 0.4-0.8 2	1.3	0	85
	Canned	74.9	19.9	1.8	3.4	0	96
Shrimp, Rock <u>Silyonia brevirostris</u>	Muscle						
	Cooked						
	Boiled	76.7	21.6	0.5	1.6	0	91
Shrimp, Sea Bob <u>Xiphopenaeus kroyeri</u>	Muscle						
	Raw	79.8	18.2	0.3	1.5	0.2	76
Shrimp, Tiger <u>Penaeus esculentus</u>	Muscle						
	Raw	80.0	16.0	1.1	1.4	1.5	80
Shrimp, White <u>Penaeus indicus</u>	Muscle						
	Raw	78.5	17.0	0.4	1.4	2.7	82
	Raw	75.5	14.9	0.8	2.8	6.0	91
	Whole						
	Salted & Fermented	63.3	14.9	1.0	20.6	0.2	69
Shrimp, White <u>Penaeus schmitti</u>	Muscle						
	Raw	78.7	20.3	0.9	1.6	0	89
Shrimp, White <u>Penaeus setiferus</u>	Muscle						
	Raw	78.9 76.2-81.4 4	19.4 16.9-22.0 4	0.3 0.2-0.7 4	1.4 1.1-1.9 4	0	80
	Canned						
	With Salt	67.0	26.7	1.3	5.0	0	139
	With Salt & Water	79.1	15.0	0.7	5.2	0	87
	Unspecified	73.4 64.6-78.2 3	22.0 15.8-28.2 2	4.4 1.2-10.2 2	6.2 5.8-6.5 2	0	120
Shrimp Penaeidae	Muscle						
	Raw	77.4 72.6-83.5 8	18.9 12.9-22.9 8	1.6 0.3-3.2 8	1.7 1.4-2.1 7	0.4	92
	Canned						
	Boiled	74.0	21.5	0.7	3.2	0.6	95
	Cooked						
	Prefried	35.7	19.9	18.7	3.7	22.0	336
	Dried	13.7	62.4	3.5	4.8	15.6	344
	Paste	34.5	29.8	1.2	28.0	6.5	156
	Salted	29.6	52.3	1.9	14.6	1.6	233
	Whole						
	Raw	67.5	22.0	2.0	7.9	0.6	108
	Salted	67.2	10.4	1.2	20.5	0.7	55
Shrimp Unspecified	Muscle						
	Raw	77.2 61.6-86.4 18	18.4 6.4-25.0 25	1.7 0.3-10.2 12	1.4 1.0-1.9 12	1.3	209
	Breaded	54.4 43.6-65.2 2	11.9 11.8-12.0 2	7.6 1.6-13.7 2	2.8	23.3	109

Table 2.--Proximate composition of crustaceans and products.

Common and Scientific Name	Description	Moisture %	Protein %	Fat %	Ash %	Carbohydrate ^{2/} %	Calories ^{3/} Per 100 gram
Canned	Heat Processed	70.8	23.3	0.8	2.7	1.1	106
	With Salt	70.6	22.4	1.1	6.0	0	100
	Unspecified	74.6	20.8	1.1	3.7	0	93
		69.7-81.4 9	15.2-26.8 10	0.7-1.8 11	2.4-14.1 6		
Cooked	A la King	71.9	12.5	5.2	1.7	8.7	132
	Apple Salad	73.9	7.4	11.2	1.8	5.7	133
	Au Gratin						
	With Tomato Sauce	67.8	14.9	8.5	2.3	6.5	162
	Unspecified	66.3	15.4	9.8	2.3	6.2	175
	Bisque	78.4	9.9	6.2	1.6	3.9	111
	Boiled	80.5	15.1	3.0	1.1	0.3	89
	Canapes	59.5	13.9	6.0	2.7	17.9	181
	Casserole	71.9	11.3	7.6	2.1	7.1	142
	Creole	80.6	6.1	3.2	1.4	8.7	88
		79.2-82.0 2	6.0-6.2 2	2.8-3.5 2	1.3-1.6 2		
Curried	With Pepper, Celery, Onion, & Cornstarch	82.0	7.2	5.6	1.8	3.4	93
	Unspecified	74.0	9.9	4.2	1.5	10.4	119
	Fried						
	Bartered	60.4	21.1	9.6	1.9	7.0	199
	With Celery, Onion, and Tomato	49.9	9.0	9.7	1.2	30.2	244
	Unspecified	50.4	19.1	11.8	2.2	16.5	249
		44.9-54.2 3	18.4-20.4 3	9.0-14.0 3	1.4-3.3 3		
	In Green Peppers	79.9	10.4	2.6	1.7	5.4	87
	In Tomato Aspic	83.9	11.3	0.9	2.1	1.8	61
	In Tomatoes	81.1	8.5	2.7	1.7	6.0	82
Jambalaya	Jambalaya	79.7	7.7	2.5	1.5	8.6	88
	Kabobs	69.6	22.1	5.1	3.1	0.1	135
	Meuniere	57.3	24.2	16.1	2.5	0	242
	Moussé	76.1	10.9	8.9	1.6	2.5	134
	Newberg	66.5	15.4	11.8	1.8	4.5	186
	Salad	74.0	15.2	6.4	1.8	2.6	129
	Sauce	74.9	9.8	3.7	1.9	9.7	111
	Thermidor	72.9	14.0	6.7	2.1	4.3	134
	Turnovers	34.1	14.6	19.5	3.3	28.5	348
	Wiggle	71.9	11.1	5.4	1.8	9.8	132
	With Burdock Root, Soy Sauce, & Sugar	64.9	8.7	3.2	4.3	18.9	139
	Unspecified	68.6	22.2	1.5	3.2	4.5	120
		62.5-72.0 4	21.0-25.0 5	0.8-2.4 5	1.0-5.4 2		
	Dried	19.4	61.5	3.0	11.8	4.3	290
		14.6-24.0 5	55.4-70.8 6	2.0-6.0 6	2.5-19.7 4		
	Paste	49.6	24.1	7.0	3.0	16.3	225
		34.5-64.7 2	18.4-29.8 2	2.5-11.5 2			
	Salted & Dried	27.6	53.1	2.0	17.6	0	230
		20.4-32.0 3	40.9-63.0 3	1.8-2.2 3	13.4-21.8 2		
	Salted & Fermented	61.6	12.3	2.4	21.8	1.9	78
		58.4-64.8 2	12.2-12.4 2	1.1-3.6 2	17.6-26.1 2		
Smoked Meal	Smoked	28.2	54.4	5.2	10.4	1.8	272
	Meal	6.6	46.1	12.9	25.8	8.6	335
		5.0-8.9 2	42.3-48.7 3		21.6-29.9 2		
FPC ^{8/}	FPC	7.7	91.0	0.3	4.5	0	607
Muscle with Vein	Raw	71.6	23.6	1.9	2.7	0.2	112
		71.0-72.0 3	21.2-25.4 3	1.0-3.5 3	2.6-2.8 3		
%Whole	Raw	68.1	20.0	0.8	6.5	4.6	106
			16.8-23.3 2				
Dried	Dried	19.0	65.1	4.8	7.4	3.7	318
		16.3-21.6 2	59.4-70.8 2	3.6-6.0 2	2.5-12.2 2		

1/ This value was obtained by difference of the average of the means.

2/ Caloric value estimated by multiplying protein content by 4; fat by 9; and carbohydrate by 4.

3/ Average of the means obtained from the literature cited.

4/ Range of the means found in literature cited.

5/ Number of mean values, which were reported in the literature cited.

6/ Figure obtained by calculation.

7/ Method of processing was not clearly described or the fish was identified only by common name.

8/ FPC abbreviation for fish protein concentrate.

Table 3.--Proximate composition of mollusks and products.

Common and Scientific Name	Description	Moisture %	Protein %	Fat %	Ash %	Carbohydrates ^{1/} %	Calories ^{2/} Per 100 grams
Abalone <u>Haliotis gigantea</u>	Muscle						
	Raw	78.3 ^{3/} 75.7-82.3 ^{4/}	15.2 ^{3/} 10.4-20.1 ^{4/}	0.4 ^{3/} 0.2-0.5 ^{4/}	1.4 ^{3/} 1.0-1.6 ^{4/}	0	64
	Canned	72.5 63.1-87.3 ⁴	16.5 10.2-24.8 ⁴	0.7 0.1-2.0 ⁴	2.7 1.2-4.2 ⁴	7.6	102
	Whole						
Abalone <u>Haliotis japonica</u>	Raw	81.1	10.2	0.5	1.6	6.6	76
	Muscle						
Abalone <u>Haliotis</u>	Raw	76.8 72.0-79.1 ⁵	16.0 11.9-24.8 ⁴	0.4 0.3-0.6 ⁵	1.5 1.0-2.0 ⁴	5.3	89
	Muscle						
	Raw	74.5 70.9-76.9 ¹¹	17.9 8.0-23.4 ⁹	0.6 0.1-1.1 ¹⁰	2.1 1.4-3.4 ⁹	4.9	97
	Canned	71.2 63.1-80.2 ⁴	16.5 14.7-19.1 ⁴	0.2 0.1-0.3 ³	2.4 1.2-4.2 ³	9.7	107
Abalone <u>Haliotidae</u>	Dried	29.1 22.1-36.0 ²	48.6 40.6-56.6 ²	1.4 0.9-1.9 ²	5.7 4.8-6.6 ²	15.2	268
	Muscle						
Clam, Arkshell <u>Anadara broughtoni</u>	Raw	82.8 79.6-85.4 ⁴	12.1 11.0-13.2 ⁴	0.6 0.4-0.9 ⁴	1.3 0.7-2.2 ⁴	3.2	67
	Whole						
Clam, Arkshell <u>Arca granosa</u>	Raw	81.4	10.2	0.6	3.7	3.9	64
	Muscle						
Clam, Arkshell <u>Arca inflata</u>	Raw	79.5	10.7	0.5	1.3	8.0	79
	Muscle						
Clam, Arkshell <u>Arca noae</u>	Raw	78.8 78.2-79.3 ²	10.3 10.0-10.6 ²	1.7 1.1-2.3 ²	0.7 0.7-0.7 ²	8.5	91
	Muscle						
Clam, Arkshell <u>Arcidae</u>	Raw	77.7	15.3	0.9	1.8	4.3	87
	Muscle						
Clam, Donax, Bean <u>Donax radians</u>	Raw	81.2 78.2-88.5 ⁶	11.7 7.6-15.5 ⁴	1.1 0.5-2.2 ⁶	1.4 0.7-2.0 ³	4.6	75
	Canned	69.0	18.0	1.3	3.7 3.4-3.9 ²	8.0	116
Clam, Fresh Water <u>Corbicula striata</u>	Whole						
	Raw	82.2	8.8	1.7	2.2	5.1	74
Clam, Fresh Water <u>Corbicula fluminea</u>	Whole						
	Raw	77.6 76.1-79.2 ²	5.8 4.3-7.3 ²	4.0 1.8-6.1 ²	1.6	11.0	103
Clam, Fresh Water <u>Corbicula fluminea</u>	Whole						
	Raw	81.4 81.0-81.8 ²	7.8 6.2-9.3 ²	1.5 1.4-1.6 ²	0.9 0.7-1.1 ²	8.4	78
	Cooked Unspecified ^{6/}	81.8	5.9	1.0	0.6	10.7	65

Table 3.--Proximate composition of mollusks and products.

Common and Scientific Name	Description	Moisture %	Protein %	Fat %	Ash %	Carbohydrates ^{1/} %	Calories ^{2/} Per 100 grams
Clam, Fresh Water <u>Corbicula sandai</u>	Whole Raw	80.0 77.8-81.9 12	10.1 8.6-11.4 1.2	2.4 1.7-3.2 12	1.0 1.7-1.6 12	6.5	88
Clam, Fresh Water, Corbshell <u>Corbicula japonica</u>	Whole Raw	79.8	11.1	1.2 0.9-1.6 2	1.4	6.5	81
Clam, Fresh Water, Corbshell <u>Corbicula leana</u>	Whole Raw	82.1 77.2-84.1 4	9.0 7.0-10.5 4	1.1 0.7-2.8 4	1.2 1.0-1.6 3	6.6	72
Clam, Fresh Water Corbiculadidae	Whole Raw	77.9 76.0-80.0 4	12.8 11.1-15.0 3	3.2 1.8-6.1 3	1.6	4.5	98
Clam, Green <u>Cyrena ventricosa</u>	Whole Raw	82.8	10.3	1.6	0.8	4.5	74
Clam Cyraenidae	Whole Raw	82.3	9.6	2.2	1.8	4.3	64
Clam, Mactra, Gaper <u>Tresus keenae</u>	Muscle Raw	76.6	19.0	0.6	1.5	2.3	91
Clam, Mactra, Surf <u>Mactra sachaenensis</u>	Muscle Raw	73.6	17.8	1.2	2.4	5.0	102
Clam, Mactra, Surf <u>Spisula solidissima</u>	Muscle Raw	82.8 79.4-85.5 3	13.5 11.7-15.6 3	0.5 0.3-0.8 3	1.1 0.5-2.3 3	2.1	67
Clam, Mactra Mactridae	Muscle Raw	79.3 76.1-84.4 4	15.6 11.0-19.0 4	1.0 0.6-1.3 3	2.3 2.2-2.4 3	1.8	79
	Canned Seasoned	49.6	19.5	0.7	8.9	21.3	169
Clam, Razor <u>Solen gouldi</u>	Whole Salted & Dried	(63.0) ^{2/}	26.3	2.3	8.6	0	126
Clam, Razor <u>Solen siliqua</u>	Whole Raw	80.5	11.1	1.8	2.0	2.0	71
Clam, Razor, Navajos <u>Solen ensis</u>	Whole Raw	79.8	14.3	2.0	2.1	1.6	75
Clam, Razor Solenidae	Whole Raw	82.1 75.2-89.0 5	11.2 6.9-13.3 5	1.5 1.0-2.4 5	1.8 1.1-2.6 5	3.4	72
	Canned	85.3 84.5-86.1 2	9.0 8.9-9.0 2	1.3	2.0 1.6-2.3 2	2.4	57
Clam, Soft Shell <u>Mesodesma globata</u>	Whole Raw	86.3	7.5	0.9	2.9	2.4	48
Clam, Soft Shell <u>Mya arenaria</u>	Whole Raw	84.6 83.3-85.5 3	10.7 9.5-12.5 6	1.2 1.3-1.4 3	1.4 1.2-1.7 2	2.1	62
	Canned	78.5	15.6	2.5	1.7	1.7	89

Table 3.--Proximate composition of mollusks and products.

Common and Scientific Name	Description	Moisture %	Protein %	Fat %	Ash %	Carbohydrates ^{1/} %	Calories ^{2/} Per 100 grams
Clam, Soft Shell, Ceoduck <u>Panope genivosa</u>	Whole Raw	78.0 77.2-78.8 2	15.5 15.0-15.9 2	2.0 0.8-3.2 2	3.2 1.8-4.6 2	1.3	85
Clam, Tellin, Rayed-Shell <u>Soletellina psammatea</u>	Whole Raw	87.5	8.7	0.8	1.6	1.4	48
Clam, Tellin Tellinidae	Whole Raw	87.5	8.7	0.8	1.6	1.4	50
Clam, Venus <u>Meretrix casta</u>	Whole Raw	77.8	9.8	0.9	1.5	10.0	87
Clam, Venus <u>Tapes aureus</u>	Whole Raw	83.4 80.9-86.0 2	9.4 8.3-10.5 2	0.8 0.6-0.9 2	3.4	3.0	57
Clam, Venus <u>Tapes pullastra</u>	Whole Raw	79.0 78.9-79.0 2	12.6 12.4-12.8 2	1.8 1.2-2.3 2	2.7 2.6-2.8 2	3.9	82
Clam, Venus <u>Venus gallina</u>	Whole Raw	78.7 75.7-81.1 30	12.2 10.7-13.7 29	0.9 0.5-2.0 29	2.9 1.6-3.5 29	5.3	78
Clam, Venus <u>Venus verrucosa</u>	Whole Raw	76.2	12.1	0.4	4.4	6.9	80
Clam, Venus, Asari <u>Tapes philippinarum</u>	Whole Raw	87.0 86.1-87.8 2	5.4 4.9-5.9 2	2.6 1.5-3.6 3	1.2	3.8	60
Clam, Venus, Butter <u>Saxidomus giganteus</u>	Whole Raw	79.3	13.2 12.4-14.0 2	1.9 1.5-2.2 2	1.7	3.9	86
	Canned	73.7	18.7	4.8	1.4	1.4	127
Clam, Venus, Butter, Pacific <u>Saxidomus nuttalli</u>	Whole Raw	80.0	13.0	1.2	1.7	4.1	79
Clam, Venus, Hard <u>Venus lusoria</u>	Whole Raw	84.6 82.8-88.6 4	10.2 9.0-11.9 5	0.6 0.3-0.8 5	1.1 0.7-1.8 3	3.5	60
Clam, Venus, Hard <u>Venus meretrix</u>	Whole Raw	77.4 76.3-78.4 2	10.6	0.7 0.5-0.9 2	1.5 1.4-1.5 2	9.8	88
Clam, Venus, Littleneck <u>Paphia staminea</u>	Whole Raw	79.4	13.5	1.0	2.6	3.5	77
Clam, Venus, Littleneck Japanese <u>Tapes (Venerupis) decussatus</u>	Whole Raw	80.3 71.5-85.2 11	12.7 9.9-18.0 15	1.2 0.7-2.5 15	1.5 1.0-2.3 9	4.3	87
	Canned	73.9 69.9-77.9 2	15.6 15.2-16.0 2	1.6 0.8-2.4 2	3.4 2.4-4.5 2	5.5	99
Clam, Venus, Northern Quahog, Cherry-stone <u>Mercenaria mercenaria</u>	Whole Raw	86.2 81.2-91.8 4	8.7 4.4-10.8 3	0.9 0.2-2.0 7	1.6 1.2-2.0 3	2.8	54

Table 3.--Proximate composition of mollusks and products.

Common and Scientific Name	Description	Moisture %	Protein %	Fat %	Ash %	Carbohydrates ^{1/} %	Calories ^{2/} Per 100 gram
	Canned	83.6 82.6-84.6 2	9.7 9.6-9.9 2	2.4 0.4-4.4 2	2.3 2.3-2.6 2	2.0	77
Clam, Venus, Pismo <u>Tivela scultorum</u>	Whole Canned	81.9	11.2	1.4	1.5	4.0	74
Clam, Venus, Shortneck <u>Tapes japonica</u>	Whole Raw	82.6 80.5-84.7 3	11.3 10.1-12.3 4	1.8 0.8-3.6 3	1.6	2.7	72
Clam Unspecified	Whole Raw	84.3 78.6-87.9 15	9.7 6.5-12.9 15	1.6 0.3-3.1 18	2.0 1.2-3.9 11	2.4	63
	Canned Seasoned	59.6	9.5	0.7	8.9	21.3	170
	Unspecified	79.2 69.9-86.0 4	11.1 7.8-15.2 6	1.3 0.8-2.4 6	3.2 2.4-4.5 3	5.1	77
	Cooked Appetizers With Cheese Chowder Manhattan	63.1 85.1 82.5-89.8 3	10.9 2.2 1.2-2.8 3	19.3 2.1 1.2-2.8 3	2.0 2.2 1.3-2.7 3	4.7 8.4	236 57
	New England	81.5 78.1-84.6 3	5.1 3.8-6.5 3	13. 0.9-1.7 3	3.7 1.1-7.5 3	8.7	67
	Pudget Sound Fritters Loaf	83.1 40.3 65.0	3.8 11.4 10.4	2.5 15.0 11.2	1.6 2.4 2.1	9.0 30.9 11.3	44 304 188
Cockle <u>Cardium muticum</u>	Whole Raw	75.4	15.7	0.7	1.6	2.6	80
Cockle, Atlantic <u>Cardium edule</u>	Whole Raw	81.4 73.4-92.0 10	10.6 9.2-14.1 6	1.0 0.6-2.7 8	2.6 2.1-3.1 4	4.4	69
Cockle, Pacific <u>Cardium corbis</u>	Whole Raw	82.4	11.8	1.1 1.0-1.2 2	1.6	3.1	70
Cockle, Sand <u>Hemidonax donaciformus</u>	Whole Raw	81.4 79.2-83.6 2	16.8	1.0	3.1	0	76
Cockle Cardiidae	Muscle Raw	79.7 65.7-92.0 4	9.5 4.2-11.0 5	0.6 0.3-1.3 4	1.7 1.2-2.2 2	8.5	50
	Canned Dried	52.1 15.4 11.0-19.8 2	19.3 55.2 51.7-58.6 2	2.6 2.7 1.6-3.7 2	6.8 8.8 7.9-9.7 2	19.2 17.9	128 280
	Whole Meal	12.0	31.2	7.7	39.5	9.6	233
Cuttlefish <u>Sepia officinalis</u>	Muscle Raw	78.8 76.1-82.4 7	16.8 14.0-21.8 8	1.0 0.6-1.5 8	1.9 1.5-2.7 7	1.5	82

Table 3.--Proximate composition of mollusks and products.

Common and Scientific Name	Description	Moisture %	Protein %	Fat %	Ash %	Carbohydrates ^{1/} %	Calories ^{2/} Per 100 grams
Cuttlefish <u>Sepia orientalis</u>	Muscle Raw	80.1	16.0	0.8	1.7	1.4	77
Cuttlefish Sepiidae	Muscle Raw	79.3 76.7-83.6 10	17.4 14.9-21.0 11	1.1 0.7-2.5 7	1.3 1.0-1.6 3	0.9	83
	Skinned	63.6	20.8	2.8	2.2	10.6	151
	Skinned Inspected	77.9	19.1	0.4	2.6	0	80
	Dried	23.0	62.8	3.9	(11.3)	0	267
Mussel <u>Geukensia demissa</u>	Whole Raw	68.7	18.7	1.3	3.4	7.9	118
Mussel <u>Mytilus schlegelii</u>	Whole Raw	87.7 86.5-90.0 4	5.5 3.8-6.7 4	1.0 0.7-1.4 4	1.4 1.2-1.6 4	4.4	49
Mussel <u>Mytilus mundahuensis</u>	Whole Raw	81.8	11.8	1.5	2.8	2.1	69
Mussel <u>Unio biva</u>	Whole Raw	81.6 80.6-83.9 12	7.8 6.3-9.4 12	1.6 0.9-2.2 12	1.7 1.0-2.7 12	7.3	75
Mussel, Blue <u>Mytilus edulis</u>	Whole Raw	80.0 76.2-90.4 16	11.6 9.9-15.4 16	1.7 1.2-3.1 18	2.2 1.4-3.2 12	4.5	80
	Cooked Boiled Meal	72.2 (2.8)	17.9 70.0	3.1 0.2	1.7 12.0	5.1 15.0	120 342
Mussel, European <u>Mytilus galloprovincialis</u>	Whole Raw	81.3 79.2-83.0 3	10.6 8.4-12.0 4	3.0 1.3-7.0 4	2.1 1.3-2.5 4	3.0	66
Mussel, Sea <u>Mytilus crassitesta</u>	Whole Raw	81.1 80.4-81.8 2	15.0 13.3-16.7 2	0.4 0.4-0.5 2	1.3 1.1-1.4 2	2.2	72
Mussel Mytilidae	Whole Raw	87.0 86.0-87.9 2	11.7 7.6-15.7 2	1.2	1.7 1.6-1.7 2	0	58
	Dried	13.8	51.9	7.2	7.8	19.3	350
Mussel Unspecified	Whole Raw	81.0 74.5-84.2 10	12.2 8.7-15.8 8	1.6 1.0-3.2 9	1.7 1.3-2.0 3	3.5	77
	Cooked Boiled	79.0	16.8	2.0	(2.2)	0	87
Octopus <u>Eledone moschata</u>	Muscle Raw	80.7	15.3	0.5	1.8	1.7	73
Octopus <u>Octopus ocellatus</u>	Muscle Raw	84.4 83.8-85.1 2	11.4 10.1-12.6 2	1.0 0.9-1.1 2	1.7 1.5-1.8 2	1.5	61
	Roe Raw	61.2	27.1	4.0	1.8	5.9	248

Table 3.--Proximate composition of mollusks and products.

Common and Scientific Name	Description	Moisture %	Protein %	Fat %	Ash %	Carbohydrates- 1/ %	Calories ² / Per 100 gram
Octopus <u>Paroctopus hongkongensis</u>	Muscle Raw	84.9	13.2	0.6	1.6	0	60
Octopus, Devilfish <u>Octopus vulgaris</u>	Muscle Raw	81.2 77.3-83.9 5	14.8 10.0-18.7 8	0.8 0.4-1.1 5	1.5 1.2-1.8 6	1.7	73
	Dried	12.0	50.3	14.3	9.1	14.3	387
Octopus Eledonidae	Muscle Raw	80.0	16.3	0.5	2.1	1.1	74
Octopus Octopodidae	Muscle Raw	84.9	13.7	0.6	0.8	0	60
Octopus Unspecified	Muscle Raw	82.3 77.0-85.5 9	14.2 9.5-17.1 10	1.2 0.3-4.6 8	1.4 0.8-1.6 8	0.9	70
	Roe Raw	64.2 61.2-67.3 2	26.5	3.7 3.5-4.0 2	1.4	4.2	156
	Dried	13.2 12.4-13.9 2	67.8 65.3-70.3 2	4.2 1.0-6.4 2	16.9 16.3-17.5 2	0	309
Oyster <u>Etheria elliptica</u>	Whole Raw	70.0	12.3	2.3	6.6	8.8	105
Oyster <u>Ostrea rhizophorae</u>	Whole Raw	78.5	11.7	2.0	(7.2)	0	65
Oyster <u>Ostrea taurica</u>	Whole Raw	83.2	8.2	1.3	1.8	5.5	66
Oyster, Common <u>Ostrea edulis</u>	Whole Raw	81.0 79.3-82.7 3	10.3 9.6-10.7 3	1.6 1.3-1.8 3	2.2 1.4-3.3 3	4.9	75
	Cooked Steamed	81.0	10.0	1.4	(1.6)	6.0	77
Oyster, Eastern <u>Ostrea virginica</u>	Whole Raw	84.0 77.4-90.0 12	7.9 5.2-10.0 11	1.7 1.0-2.7 15	1.6 0.8-2.1 8	4.8	72
	Canned	82.6 81.7-83.5 2	8.6 8.3-8.8 2	2.0 1.6-2.5 2	1.8 0.7-3.0 2	5.0	72
Oyster, Giant Pacific <u>Ostrea gigas</u>	Whole Raw	79.5 77.7-80.9 3	11.1 9.6-14.3 4	2.1 0.8-2.6 4	1.5	5.8	86
Oyster, Japanese <u>Ostrea laperousei</u>	Whole Raw	85.2	9.6	0.7	1.0	3.5	59
Oyster, Native Pacific <u>Ostrea lurida</u>	Whole Raw	81.0 80.6-81.7 3	9.6 9.4-9.7 3	2.5 1.9-3.6 3	1.5 1.4-1.6 2	5.4	82
Oyster, Portuguese <u>Ostrea angulata</u>	Whole Raw	80.4	11.3	1.7	2.6	4.0	76

Table 3.--Proximate composition of mollusks and products.

Common and Scientific Name	Description	Moisture %	Protein %	Fat %	Ash %	Carbohydrates ^{1/} %	Calories ^{2/} Per 100 grams
Oyster, Talaba <u>Ostrea malabonensis</u>	Whole Raw	83.4 83.1-83.8 2	6.8 6.5-7.0 2	2.9 2.6-3.2 2	3.9 3.2-4.6 2	3.0	65
Oyster Ostreidae	Whole Raw	83.5 78.4-88.9 21	8.5 5.5-13.3 23	1.8 0.5-3.6 22	1.8 0.6-3.0 15	4.4	68
	Canned	78.5	12.4	3.9	2.4	2.8	96
	Boiled	58.5	15.1	13.2	2.5	10.7	222
	In Oil, Smoked	80.3	9.8	2.0	2.0	5.9	81
	With Salt	82.1	9.3	2.8	(5.8)	0	56
	Unspecified	82.0-82.2 2	9.2-9.4 2	2.7-2.8 2			
	Cooked	54.7	8.6	13.9	1.5	21.3	245
	Fried	16.0	40.7	6.5	7.7	29.1	338
	Dried	13.1-18.8 2	35.4-46.0 2	5.1-7.9 2	7.3-8.1 2		
	Salted & Fermented FPC 2/	85.2 8.8	3.3 62.3	2.5 0.6	7.6 6.2	1.4	279
Pen Shell <u>Atrina japonica</u>	Muscle Raw	76.2	18.2	0.4	1.4	3.8	92
Pen Shell <u>Atrina kinoshitae</u>	Muscle Raw	86.0	11.6	0.1	1.3	1.0	51
Periwinkle <u>Littorina littorea</u>	Whole Raw	70.1 68.3-73.0 3	18.2 15.7-20.0 3	2.4 1.2-4.5 5	7.0 6.5-7.5 2	2.3	104
Periwinkle Unspecified	Whole Raw	74.2 73.3-75.1 2	12.0	2.3	4.6	6.9	96
	Cooked	78.0	16.4	2.0	3.7	0	74
	Boiled	76.8-79.1 2	15.2-17.6 2	1.4-2.6 2	3.0-4.3 2		
Scallop <u>Chlamys glabra</u>	Muscle Raw	83.5	10.9	1.1	1.6	1.0	57
Scallop <u>Pecten caurinus</u>	Muscle Raw	84.0 80.9-87.1 2	16.6	1.1	1.5	0	76
Scallop, Atlantic Bay <u>Aequipecten irradians</u>	Muscle Raw	80.2 78.0-82.9 6	14.8 13.7-16.0 6	0.6 0.3-1.5 6	1.5 1.3-1.7 6	2.9	76
Scallop, Calico <u>Aequipecten gibbus</u>	Muscle Raw	79.4 77.8-82.1 7	16.1 15.4-16.9 7	0.6 0.2-1.0 7	1.5 1.4-1.8 7	2.4	79
Scallop, Common <u>Pecten yessoensis</u>	Muscle Raw	79.6 68.1	16.3 21.4	0.4 0.2	1.5 2.8	2.2 7.5	82 117
	Canned	64.4-71.8 2	20.1-22.6 2	0.1-0.3 2	1.9-3.6 2		
	Dried	16.2	66.2	2.5	6.7	8.4	340

Table 3.--Proximate composition of mollusks and products.

Common and Scientific Name	Description	Moisture %	Protein %	Fat %	Ash %	Carbohydrates %	1/ Calories Per 100 grams
Scallop, Coquille St. Jacques <u>Pecten maximus</u>	Muscle Raw	77.3 72.5-80.7 29	16.2 12.5-18.0 24	0.8	1.5 1.3-1.9 22	4.2	89
Scallop, Great <u>Pecten jacobaeus</u>	Muscle Raw	76.6 75.2-77.9 4	17.2 16.8-18.3 4	0.5 0.3-0.6 4	1.8 1.7-1.8 4	3.9	89
Scallop, Green <u>Chlamys opercularis</u>	Muscle Raw	80.0	18.0	0.1	(0.7)	(1.2)	78
Scallop, Sea <u>Pecten magellanicus</u>	Muscle Raw	77.8 74.6-80.4 7	17.4 15.2-20.1 7	0.6 0.2-1.0 8	1.6 1.3-1.8 7	2.6	85
Scallop Unspecified	Muscle Raw	79.8 75.6-81.3 16 9	14.6 9.8-16.4 9 13	0.7 0.1-1.5 13 7	1.6 1.4-1.8 7	3.3	78
	Breaded Canned	67.3 68.1 64.4-71.8 2	13.9 21.4 20.1-22.6 2	0.3 0.2 0.1-0.3 2	1.7 2.8 1.9-3.6 2	16.8 7.5	128 117
	Cooked Fried Breaded	59.9	12.4	6.4 6.3-6.5 2	(1.8)	19.5	188
	Kabob With Pineapple With Tomato	72.2 80.7	15.2 14.0	1.1 1.1	1.5 1.4	10.0 2.8	110 75
	Steamed Dried	73.1 13.9 13.6-14.1 2	22.4 71.1	1.4 1.1 0.4-1.8 2	(1.6) 5.7 3.5-8.0 2	3.1 8.2	115 327
Snail <u>Achatina marginata</u>	Whole Raw	78.0	17.7	3.5	0.8	0	107
Snail <u>Murex brandarix</u>	Whole Raw	72.2	18.6	1.7	1.9	5.6	112
Snail <u>Strombus canarium</u>	Whole Dried	14.5	75.6	3.2	4.8	1.9	339
Snail <u>Thais chocolata</u>	Whole Raw	72.0	19.6	0.6	2.8	5.0	104
Snail <u>Vivipara javanica</u>	Whole Raw	74.9	18.3	0.3	2.8	3.7	91
Snail Botoclagadidae	Whole Salted & Dried	18.8	65.5	1.3	6.5	7.9	305
Snail, Almeja <u>Nassa reticulata</u>	Whole Raw	66.5	18.3	2.9	4.4	7.9	131
Snail, Escargot Helixidae	Whole Raw	82.0	15.0	0.8	(2.2)	0	67
Snail, Mud <u>Nassa mutabilis</u>	Whole Raw	68.8	18.5	2.2	4.7	5.8	117
Snail, Pelican <u>Aporrhais pespelecani</u>	Whole Raw	67.6	13.4	1.2	7.4	10.4	106

Table 3.--Proximate composition of mollusks and products.

Common and Scientific Name	Description	Moisture %	Protein %	Fat %	Ash %	Carbohydrates ^{1/} %	Calories ^{2/} Per 100 grams
Snail, Pond <u>Ampullaria luzonica</u>	Whole Raw	72.2	12.0	0.5	3.3	12.0	101
Snail, River <u>Viviparus malleatus</u>	Whole Raw	75.8	18.2	0.6	4.0	1.4	84
Snail, River <u>Viviparadidae</u>	Whole Raw	79.5	11.8 11.6-12.0 2	1.2 0.9-1.4 2	3.2	4.3	75
Snail, Sea <u>Yetusidae</u>	Whole Dried	50.6	27.6	0.4	5.8	15.6	176
Snail Unspecified	Whole Raw	84.0 79.3-94.8 9	14.4 9.9-16.4 4	1.9 0.8-4.5 14	1.5 1.4-1.6 2	0	75
Squid <u>Dosidicus gigas</u>	Whole Meal	7.6	75.6	6.9	10.3	0	365
Squid <u>Loligo bleekeri</u>	Muscle Raw	84.2	13.3 11.6-14.6 3	1.2	0.9	0	64
Squid <u>Loligo brevis</u>	Muscle Raw	84.0	13.5	1.5	1.0	0	68
Squid <u>Loligo gahi</u>	Muscle Raw	80.9	16.1 15.7-16.5 2	0.9	1.4	0.7	75
Squid <u>Loligo javanica</u>	Muscle Raw	70.2	25.4	1.4	0.9	2.1	123
Squid <u>Loligo ommastrephes</u>	Muscle Raw	82.0	15.3	0.8	1.2	0.7	71
Squid <u>Watasemia scintillans</u>	Muscle Raw	77.5	17.4	3.0	1.5	0.6	102
Squid, Common <u>Loligo vulgaris</u>	Muscle Raw	78.3 75.5-79.7 6	16.8 12.6-20.6 5	1.3 0.9-1.7 5	1.7 1.4-2.1 5	1.9	87
	Whole Raw	78.2	14.2	1.2	3.7	2.7	78
Squid, Flying <u>Ommastrephes sagittatus</u>	Muscle Raw	83.9	12.8	1.5	0.6	1.2	70
Squid, Japanese <u>Ommastrephes sloani pacificus</u>	Muscle Raw	78.0 76.8-80.4 10	18.2 14.4-21.0 14	1.1 0.7-2.2 7	1.4 0.9-1.7 7	1.3	88
Squid, Long-finned <u>Loligo pealei</u>	Muscle Raw	78.5 74.2-82.7 2	13.2 11.8-14.5 2	0.7 0.5-0.9 2	1.6 0.8-2.4 2	6.0	83
	Dried	30.6	57.4	4.5	5.5	2.0	278
Squid, Pacific <u>Loligo opalescens</u>	Muscle Raw	79.4 78.6-80.1 2	16.6 16.5-16.7 2	1.4 0.5-2.2 2	1.0 0.9-1.1 2	1.6	85

Table 3.--Proximate composition of mollusks and products.

Common and Scientific Name	Description	Moisture %	Protein %	Fat %	Ash %	Carbohydrates ^{1/} %	Calories ^{2/} Per 100 grams
Squid, Short-Finned, Atlantic <u>Illex illecebrosus</u>	Muscle						
	Raw	77.5 77.4-77.6 2	17.3	1.7 1.4-2.0 2	1.2	2.3	94
Squid Loliginidae	Muscle						
	Raw	79.3 75.8-82.0 3	17.1 15.3-19.3 3	1.0 0.8-1.4 3	1.5 1.2-1.9 3	1.1	82
	Cooked						
	Unspecified	73.3	24.2	1.2	1.1	0	108
	Salted & Dried	21.8	63.3	4.6	6.4	3.9	310
Squid Unspecified	Soaked	65.2	29.3	3.6	0.9	1.0	158
	Muscle						
	Raw	79.5 74.2-84.8 15	15.6 12.7-18.4 16	1.3 0.4-4.6 16	1.3 1.1-2.4 11	2.3	84
	Cooked						
	Unspecified	77.3	26.0 20.9-27.8 4	0.9 0.7-1.7 4	1.1	0	112
	Dried	20.8 4.4-31.4 6	60.9 48.0-81.2 8	3.9 2.0-5.3 8	7.0 4.1-11.4 6	7.4	108
	Smoked	38.5	35.2	2.5	6.2	17.6	234
Topshell Trochidae	Muscle						
	Raw	75.7 74.8-76.5 2	19.1	1.5 0.8-2.3 3	1.9	1.8	97
	Whole						
	Raw	73.1	19.8	2.0	3.7	1.4	103
Turban <u>Turbo cornutus</u>	Canned	69.4	22.7	1.4	5.2	1.3	109
	Muscle						
Whelk <u>Buccinum verukruzeni</u>	Raw	75.1 74.1-77.0 4	18.8 16.1-20.0 4	0.7 0.3-1.4 6	1.5 1.4-1.7 4	3.9	92
	Muscle						
Whelk <u>Eburna japonica</u>	Raw	76.2	19.1	0.3	1.6	2.8	90
	Muscle						
Whelk <u>Neptunea poycostata</u>	Raw	83.6	11.6	0.6	0.8	3.4	65
	Muscle						
Whelk <u>Nucella lapillus</u>	Raw	79.7	15.6	0.1	1.5	3.1	76
	Whole						
Whelk, Dog Winkle, Atlantic <u>Nucella lapillus</u>	Raw	64.9 63.7-67.0 3	21.0 16.9-23.5 3	2.9 1.0-5.2 3	5.8 5.1-6.9 3	5.4	132
	Muscle						
Whelk, Oregon Triton <u>Fusitriton oregonensis</u>	Raw	77.4	17.9	0.1	1.3	3.3	86
	Muscle						
Whelk Unspecified	Cooked						
	Unspecified	77.5	17.7 17.6-17.8 2	2.3 1.9-2.6 2	(2.5)	0	102
	Dried	13.5	50.2	2.2	13.5	20.6	303

1/ This value was obtained by difference of the average of the means.

2/ Caloric value estimated by multiplying protein content by 4; fat by 9; and carbohydrate by 4.

3/ Average of the means obtained from the literature cited.

4/ Range of the means found in literature cited.

5/ Number of mean values, which were reported in the literature cited.

6/ Method of processing was not clearly described or the fish was identified only by common name.

7/ Figure obtained by calculation.

8/ FPC abbreviation for fish protein concentrate.

Table 4.-- Amino Acid composition of finfishes, whales, and products.

Common and Scientific Name	Description	% of total protein						
		Lysine	Histidine	Cystine	Arginine	Tryptophan	Aspartic acid	Threonine
Alewife <u>Alosa pseudoharengus</u>	Muscle Raw	7.9	1.8		4.8	1.2	8.1	3.7
	Whole Raw	7.7 $\frac{1}{2}$ / 7.0-8.4 $\frac{2}{3}$	1.8 $\frac{1}{2}$ / 1.5-2.2 $\frac{2}{3}$	0.9 $\frac{1}{2}$ / 0.8-1.1 $\frac{1}{2}$	4.9 $\frac{1}{2}$ / 4.8-5.3 $\frac{2}{3}$	1.2 $\frac{1}{2}$ / 1.0-1.4 $\frac{2}{3}$	8.1 $\frac{1}{2}$ / 6.5-9.0 $\frac{2}{3}$	3.7 $\frac{1}{2}$ / 3.1-4.1 $\frac{2}{3}$
	Fishmeal	8.4	2.9	0.7	7.2	1.0		5.0
Amberjack, Yellowtail <u>Seriola quinqueradiata</u>	Muscle Raw	10.4 8.9-12.0 3	2.6 2.6-2.7 3	2.2	7.0 6.5-7.5 3	1.1 1.1-1.2 3	11.4 11.0-11.8 3	5.3 4.5-5.8 3
	Roe Raw	10.3	3.9	0.8	7.1	1.0	8.4	5.6
Anchoveta <u>Engraulis ringens</u>	Whole Fishmeal	8.2 8.0-8.4 2	2.5 2.3-2.6 2	0.9	6.1 5.9-6.2 2	1.2	9.7 9.5-9.9 2	4.5 4.3-4.6 2
Anchovy, Longjaw, Delis <u>Stolephorus commersonii</u>	Whole FPC $\frac{4}{3}$	7.3	2.5		3.9	0.9	7.5	3.7
Anchovy, Mandali <u>Coilia dussumeri</u>	Muscle Raw	10.1	1.6	0.9	10.1	1.4		5.9
Anchovy, Pacific <u>Engraulis japonicus</u>	Muscle Raw	9.6	2.6	0.9	6.5	1.4	11.7	5.3
	Whole Raw	8.8	2.8	1.0	6.2	1.3	11.0	5.0
Anchovy Engraulidae	Muscle Raw Salted & Dried	9.6 8.6 7.8-9.5 2	2.7 1.9 1.8-2.0 2	1.0 1.4	6.4 5.3 4.5-6.1 2	1.3 1.0 0.9-1.0 2	11.6 10.9	5.1 2.8
	Whole Fishmeal	6.5 4.9-8.5 6	2.3 1.5-2.4 6	0.9 0.6-1.4 5	4.4 3.1-5.9 7	0.7 0.7-0.8 3	7.9 6.1-9.7 6	3.5 2.7-4.3 6
Argentine, Atlantic <u>Argentina silus</u>	Whole Fishmeal	8.4	2.7	1.4	6.3	1.3	8.9	4.4
Barb, Bony-lipped <u>Osteocheilus hasselti</u>	Muscle Raw	7.5	1.0	1.2	9.3	0.9		5.5
Barracuda, Red <u>Sphyræna pinguis</u>	Roe Raw	7.7	3.0	1.3	5.2	0.9	7.3	5.1
Bass, Sea Serranidae	Muscle Raw	9.7 8.0-10.6 3	2.0	1.0	5.4	1.0	9.8	4.5
Bass, Temperate Percichthyidae	Muscle Raw	8.7	1.7		5.9		9.8	4.2

Serine	Glutamic acid	Proline	Glycine	Alanine	Valine	Methionine	Isoleucine	Tyrosine	Phenylalanine	Leucine
% of total protein										
4.1	12.9	3.8	5.5	6.1	4.2	2.4	3.6	2.6	3.4	6.7
4.1 <u>1</u> / 3.6-4.5 <u>2</u> / 6 <u>3</u> / 6	12.9 <u>1</u> / 11.3-14.0 <u>2</u> / 6 <u>3</u> / 6	3.8 <u>1</u> / 3.2-4.2 <u>2</u> / 6 <u>3</u> / 6	5.5 <u>1</u> / 4.6-6.0 <u>2</u> / 6 <u>3</u> / 5.6	6.1 <u>1</u> / 5.4-6.6 <u>2</u> / 6 <u>3</u> / 6	4.2 <u>1</u> / 3.4-4.7 <u>2</u> / 6 <u>3</u> / 5.5	2.4 <u>1</u> / 2.0-2.7 <u>2</u> / 6 <u>3</u> / 2.9	3.6 <u>1</u> / 3.0-4.1 <u>2</u> / 6 <u>3</u> / 5.2	2.6 <u>1</u> / 2.1-2.8 <u>2</u> / 6 <u>3</u> / 3.6	3.4 <u>1</u> / 2.7-3.8 <u>2</u> / 6 <u>3</u> / 4.4	6.6 <u>1</u> / 5.6-7.3 <u>2</u> / 6 <u>3</u> / 7.4
4.9 4.8-5.0 3	14.2 13.4-14.9 3	3.3 3.0-3.6 3	5.5 5.4-5.6 3	7.0 6.5-7.5 3	7.5 6.4-8.4 3	3.2 2.3-3.8 4	6.7 5.4-7.4 3	4.1 3.8-4.3 3	3.5 3.4-3.6 3	8.3 7.3-9.2 3
7.4	12.9	6.3	3.9	8.0	6.8	3.0	6.6	4.9	5.0	9.6
3.8 3.7-3.9 2	13.3 12.9-13.7 2	4.2 4.1-4.3 2	5.7 5.6-5.8 2	6.4 6.3-6.5 2	5.6 5.5-5.7 2	3.1 3.1-3.2 2	4.9 4.8-5.0 2	3.6 3.4-3.7 2	4.4 4.3-4.5 2	7.8 7.6-8.0 2
5.8	9.3	3.2	4.3		4.5	2.8	4.0	3.2	3.4	6.1
					6.4	2.8	6.3		3.9	9.3
4.8	16.5	3.9	4.8	7.1	6.0	3.5	5.6	4.0	4.7	9.7
4.8	13.3	4.5	5.9	6.4	6.2	3.7	5.4	4.2	4.8	
4.8 6.1	15.2 15.9	4.0 4.2	5.2 6.1	6.7 7.0	5.9 5.4 4.6-6.2 2	3.7 3.2 3.1-3.2 2	5.4 5.4 4.3-6.6 2	3.4 3.5	4.5 4.2	9.0 6.7
3.0 2.3-3.8 6	10.8 6.9-13.7 6	3.3 2.6-4.3 6	4.8 3.6-6.4 6	5.2 4.0-6.7 6	4.5 3.4-5.8 7	2.5 1.8-3.1 7	4.0 3.0-5.1 7	2.9 2.2-3.6 7	3.6 2.8-4.9 6	6.6 4.9-8.4 7
4.0	13.2	3.4	5.3	5.6	4.6	3.1	4.3	3.5	4.2	7.5
3.9	18.2	2.4		5.9	5.4	2.7	6.7	3.6	4.1	6.7
5.7	11.6	5.5	3.4	7.0	6.1	2.3	5.6	3.6	4.2	8.5
3.7	15.1	3.2	4.2	5.8	4.6	2.9 2.8-3.0 3	4.3	3.0	3.4	7.8
3.8	14.6	3.6	4.8	6.0	4.7	3.0	4.2	3.2	3.5	7.4

Table 4.-- Amino Acid composition of finfishes, whales, and products.

Common and Scientific Name	Description	% of total protein						
		Lysine	Histidine	Cystine	Arginine	Tryptophan	Aspartic acid	Threonine
Bluefish <u>Pomatomidae</u>	Muscle Raw	8.7	3.6		5.4		9.5	4.1
Bombay Duck <u>Harpodon nehereus</u>	Muscle Raw	9.3	2.3	0.8	7.3	1.4		4.7
Bonito, Pacific <u>Sarda chiliensis</u>	Muscle Raw	8.0	3.4 1.0-5.8 2		5.3	1.2	8.5	3.9
Bonito <u>Scombridae</u>	Muscle Raw	7.9 7.8-8.0 2	5.9 5.8-6.0 2		5.3 5.2-5.3 2	1.7	8.6 8.5-8.8 2	4.0 3.9-4.1 2
Bream, Sea, Red <u>Chrysophrys major</u>	Muscle Raw	9.8 9.6-10.0 2	2.7 2.4-2.9 3	1.0	6.3 5.9-7.0 3	1.4 1.3-1.4 2	10.7 10.6-10.8 3	5.0 4.6-5.7 3
Bream <u>Sparidae</u>	Muscle Raw	9.8	1.9	1.7	5.9		7.7	
Burbot <u>Lota lota</u>	Whole Fishmeal	9.0	3.0	0.8	7.1	0.9		4.8
Butterfish, Black <u>Stromateus niger</u>	Muscle Raw	8.7 3.7-11.4 3	3.2 1.3-7.0 4	0.9	6.2 3.7-8.4 4	1.2 0.7-1.5 3		4.5 4.1-5.0 3
	Canned	5.9 3.9-9.8 4	1.4 1.0-1.7 4		2.5 1.5-4.3 4	0.8 0.6-1.3 4		3.2 2.6-4.7 4
	Fishmeal	9.9	2.8	1.2	7.6	1.3	10.3	5.8
Butterfish, Silver <u>Stromateus cinereus</u>	Muscle Raw	9.2 7.1-14.8 8	1.8 1.4-2.3 9	0.6 0.2-1.3 6	5.5 3.5-7.7 9	0.8 0.3-1.3 6	3.6 2.5-6.9 9	
	Canned	9.0 6.1-13.2 4	1.2 1.0-1.4 4		5.7 3.8-7.5 4	0.4 0.3-0.5 4		3.3 2.6-4.3 4
	Fishmeal	9.1	2.5	1.4	6.2	1.5	10.4	5.4
Capelin <u>Mallotus villosus</u>	Whole Fishmeal	7.6 6.9-8.2 2	2.2 2.0-2.5 2	1.2 1.0-1.3 2	5.8 5.4-6.2 2	1.2	8.8 8.6-9.0 2	4.4 4.1-4.6 2
Carp <u>Cyprinus carpio</u>	Muscle Raw	11.0 9.9-11.6 4	2.3 0.5-3.2 4	1.0 1.0-1.1 2	6.7 6.2-7.2 3	1.1 1.1-1.1 2	11.6 10.9-13.0 3	5.1 3.7-6.3 5
Carp <u>Puntius javanicus</u>	Muscle Raw	6.8	2.5	0.9	8.4	1.2		4.7
Carp, Crucian <u>Cyprinus carassius</u>	Muscle Raw	10.1	2.4	1.1	5.8	1.4	10.4	4.1

Serine	Glutamic acid	Proline	Glycine	Alanine	Valine	Methionine	Isoleucine	Tyrosine	Phenylalanine	Leucine
% of total protein										
3.7	14.4	3.1	4.1	5.8	4.8	2.5	4.1	2.7	3.6	7.7
					6.2	3.9	9.4	5.3	5.2	9.4
3.6	12.9	3.2	4.6	5.3	4.4	3.1 2.7-3.5 2	3.7	3.0	3.3	7.0
3.6 3.6-3.6 2	12.8 12.7-12.8 2	3.3 3.2-3.3 2	4.6 4.5-4.6 2	5.2 5.0-5.3 2	4.3 4.2-4.4 2	2.6 2.5-2.6 3	3.8 3.7-3.9 2	4.3 2.8-7.0 3	3.2 3.0-3.3 2	5.2 3.3-7.0 2
4.4 3.8-4.9 2	15.2 14.5-15.6 3	4.0 3.7-4.3 2	5.2 5.1-5.3 3	6.6 6.4-6.9 2	6.2 5.6-6.9 2	2.9 2.3-3.7 3	5.7 5.0-6.4 2	3.8 3.2-4.4 2	4.6 4.4-5.0 3	8.6 8.3-9.1 2
3.1	20.5		2.1	6.0	6.1	3.0		2.4	4.1	11.7
			7.6		5.2	2.8	4.7	3.4	4.3	7.5
					4.7 2.9-6.7 3	2.6 1.8-4.1 3	5.6 3.4-9.7 3	3.7 1.3-6.2 2	3.4 2.1-5.1 3	7.9 6.2-10.7 3
4.6	14.4	4.0	4.6	6.2	3.2 2.4-4.3 4 6.2	1.3 0.9-1.8 4 2.8	2.6 2.0-3.5 4 5.5		2.2 1.6-2.8 4 4.1	5.6 5.0-6.6 4 9.3
					4.4 3.3-6.4 9 3.7 3.1-4.7 4 5.5	2.7 1.4-3.9 10 1.9 1.2-2.7 4 4.0	7.9 5.0-13.6 9 11.5 9.5-13.2 4 5.3	2.0 0.3-7.3 7 3.8	3.0 2.0-4.3 9 2.1 1.4-2.9 4 4.0	9.9 7.3-13.3 8 11.4 10.2-12.9 4 8.5
4.4 4.3-4.5 2	14.0 13.9-14.2 2	3.2 2.8-3.6 2	4.6 4.0-5.2 2	5.6 5.2-5.9 2	4.8 4.6-4.9 2	3.0 2.9-3.1 2	4.2 4.2-4.3 2	3.5 3.3-3.7 2	3.8 3.5-4.2 2	8.4 7.2-9.7 2
4.8 4.2-5.2 3	16.2 15.7-16.6 3	3.1 2.3-3.8 3	4.4 3.7-5.1 3	6.7 6.2-7.0 3	5.5 4.5-6.6 4	3.0 2.7-3.3 4	5.0 4.5-5.1 4	3.9 3.8-4.0 3	4.6 3.6-5.1 4	8.4 6.7-8.2 4
4.2	17.8	3.6		5.4	5.2	3.5	5.4	3.9	3.7	7.3
4.6	14.9	3.2	5.6	6.4	5.6	4.2	4.3	5.6	3.0	10.6

Table 4.-- Amino Acid composition of finfishes, whales, and products.

Common and Scientific Name	Description	% of total protein						
		Lysine	Histidine	Cystine	Arginine	Tryptophan	Aspartic acid	Threonine
Carp <i>Cyprinidae</i>	Muscle							
	Raw	9.8 9.4-10.1 2	2.1	0.1 ^{5/}	6.8	1.1	9.9	4.8 3.7-6.0 2
	Salted & Dried	9.3	2.1	0.7	7.4	0.8	10.2	4.0
	Whole							
	Raw	7.4	2.3		5.4		9.9	4.4
Catfish, Airbreathing <i>Silurus clarius</i>	FPC	8.9	1.8		6.5		8.9	3.8
	Muscle							
	Raw	8.4	2.1		6.4	0.3	9.5	5.0
	Muscle							
	Raw	10.2 9.9-10.4 2	2.4		5.8 5.6-5.9 2	1.1	8.8	4.8 4.3-5.3 2
Catfish, Fresh Water, Dwarf <i>Macrurus cavasius</i>	Muscle							
	Raw	10.2 10.2-10.3 2	1.9 1.6-2.3 2	1.4	5.3 5.0-5.6 2	1.1	8.6	4.2 3.6-4.7 2
	Dried & Seasoned	9.8	2.2	0.6	6.0	1.0	10.0	4.5
	Smoked	8.8	2.1	0.9	6.3	0.8	10.0	4.2
	Muscle							
Catfish, Sea <i>Ariidae</i>	Raw	9.3	2.2		5.8		10.3	4.5
	Muscle							
	Raw	8.5 6.8-10.3 5	1.9 1.5-3.5 5	1.4 1.4-1.4 2	6.1 5.6-6.7 5	1.2 1.1-1.3 2	10.2 9.6-10.6 4	3.7 2.9-5.3 4
	Cooked							
	Boiled	4.8	1.6		9.0	0.7		0.6
Cod, Atlantic <i>Gadus morhua</i>	Dried	9.8	2.7	1.2	6.8		10.1	4.1
	Salted	9.9 8.1-11.7 2	2.1	1.4	6.6	1.2		4.6
	Whole							
	Fishmeal	6.9	2.1	0.8	7.1		8.5	3.8
	Roe							
Cod, Pacific <i>Gadus macrocephalus</i>	Raw	7.7	2.6	1.6	5.4	1.0	9.6	5.7
	Muscle							
	Raw	9.7 8.1-11.4 14	2.3 1.2-3.7 10	1.3 0.9-1.8 6	6.1 4.9-7.1 10	1.3 0.9-1.6 6	10.6 9.9-12.2 7	4.5 2.9-5.8 10
	Offal							
	Fishmeal	7.2	1.6	1.0	6.1		7.8	3.3
Crevalle, Jack <i>Carangoides ajax</i>	Roe							
	Raw	7.6	2.2	1.6	5.1		8.4	4.5
	Muscle							
	Raw	8.6	2.8			1.5		2.9

Serine	Glutamic acid	Proline	Glycine	Alanine	Valine	Methionine	Isoleucine	Tyrosine	Phenylalanine	Leucine
% of total protein										
					4.4 4.4-4.5 2	2.8 2.7-2.8 2	6.2 4.5-7.8 2		4.2 3.6-4.7 2	7.0 6.7-7.3 2
4.7	14.0	7.3	9.6	7.0	5.1	2.5	4.9	2.9	4.5	7.5
4.4 3.9	13.7 12.8	5.9 6.4	10.2 9.1	7.4 6.5	4.8 4.2	2.9 2.8	4.2 3.6	3.0 2.6	4.1 3.6	7.5 6.5
4.1	15.4	10.0 ^{5/}	4.5	6.2	4.3	2.8	4.6	3.8	4.5	7.5
5.0	14.5		6.2	6.9	5.7	3.3	5.2	6.0	4.2 3.8-4.6 2	8.0
3.1	15.9	4.1	7.5	7.1	5.5 4.4-6.5 2	3.0 2.9-3.1 2	6.0 4.2-7.9 2	3.0	4.5 3.9-5.1 2	8.8 7.9-9.6 2
5.7 4.7	14.7 14.2	4.1 4.1	5.6 6.6	6.8 6.5	6.2 5.2	2.9 2.6	6.6 5.5	3.3 3.0	4.0 3.8	9.1 8.1
4.0	16.3	3.7	4.7	5.9	4.7	2.9	4.4	3.4	3.9	8.3
4.0 3.5-5.4 4	15.6 14.9-16.6 4	4.0 3.9-4.2 4	5.4 4.8-6.2 4	6.2 5.8-7.2 4	5.0 4.4-5.8 4	3.0 2.0-3.9 4	4.3 3.9-4.9 4	3.0 2.9-3.1 3	3.5 3.2-4.0 4	6.7 4.7-7.5 4
3.5 4.1	15.2	5.1 3.4	1.0 4.8	6.2	0.7 ^{5/} 5.5 5.4	2.2 3.3 3.4 3.2-3.5 2	5.0 4.3	4.8 3.8 4.7	14.4 ^{5/} 4.3 4.2	16.3 ^{5/} 8.2 9.4
4.9	13.4	6.5	12.1	7.3	4.6	3.0	3.8	2.8	3.7	6.4
7.9	15.7	6.0	4.6	8.7	7.1	2.8	5.8	5.1	4.5	9.4
4.5 3.1-5.4 8	15.4 10.8-19.2 7	3.8 3.1-4.2 6	4.9 4.3-5.8 7	6.4 5.5-7.9 7	5.1 4.2-5.7 9	2.9 2.1-3.7 11	4.7 2.0-7.3 10	3.6 2.8-5.0 8	3.7 1.3-4.7 10	8.2 3.7-11.0 10
4.3	12.6	5.5	10.6	6.2	3.6	2.7	3.2	1.7	3.0	5.6
5.6	13.4	6.1	3.2	7.8	6.6	2.6	6.0	4.8	4.2	9.2
	10.5	2.3	2.9	3.5	8.6	2.7	3.8		3.0	4.7

Table 4.-- Amino Acid composition of finfishes, whales, and products.

Common and Scientific Name	Description	% of total protein						
		Lysine	Histidine	Cystine	Arginine	Tryptophan	Aspartic acid	Threonine
Croaker <u>Micropogon barretoii</u>	Whole FPC	6.1	1.9		6.3		8.7	4.8
Croaker <u>Sciaena bleekeri</u>	Muscle Fishmeal	9.5	2.5	1.1	8.9	1.6	11.2	6.0
Croaker <u>Sciaena diacanthus</u>	Muscle Raw	8.4	2.2	0.9	8.5	1.2		4.2
Croaker, Atlantic <u>Micropogon undulatus</u>	Muscle Raw	8.2 6.1-9.5 5	1.8 1.4-2.2 5	1.2	5.8 5.2-6.4 6	1.0 0.7-1.2 2	10.5 8.6-13.3 4	4.0 3.6-4.3 4
Croaker Sciaenidae	Muscle Raw	9.1	1.9		5.4		10.0	4.4
	Whole Raw FPC	6.9 8.9	1.7 1.9		6.1 6.4		8.1 8.1	3.7 4.1
Cusk <u>Brosme brosme</u>	Muscle Raw	9.4	2.0	1.0	6.3	1.0	10.8	4.6
Dolphin, Mai Mai, Dorado <u>Coryphaena hippurus</u>	Muscle Cooked Broiled	8.4	2.7			1.1		2.8
Dolphin Coryphaenidae	Muscle Raw	8.0	4.5		5.3		9.0	4.0
Drum <u>Cynoscion striatus</u>	Whole FPC	6.1	2.8		7.6		7.7	6.6
Drum, Fresh Water <u>Aplocheilichthys grunniens</u>	Whole Fishmeal	8.6	2.8	0.6	7.5	0.8		4.6
Eel, Conger <u>Conger myriaster</u>	Muscle Raw	9.0	2.1	1.3	6.2	0.9	11.4	4.2
Eel, Fresh Water, American <u>Anguilla rostrata</u>	Muscle Raw	8.7 7.7-9.7 2	3.8 3.1-4.5 2		5.8 4.9-6.6 2		11.0 3.8-13.6 2	4.0 3.5-4.4 2
Eel, Fresh Water, European <u>Anguilla anguilla</u>	Muscle Raw	7.0	2.4	0.7	7.0	0.9		4.2
Eel, Fresh Water, Japanese <u>Anguilla japonica</u>	Muscle Raw	6.1	2.1	0.9	5.1	0.9	12.3	4.8
Eel, Fresh Water Anguillidae	Muscle Raw	9.4	2.6		6.3		10.6	4.8
Eel, Pike Conger, Silver <u>Muraenesox cinereus</u>	Muscle Raw	11.2 11.0-11.3 2	2.8 2.7-2.8 2		6.6 6.5-6.7 2	1.2 1.2-1.2 2	6.5 6.4-6.6 2	5.8 5.8-5.9 2
	Roe Raw	9.6	3.4	1.0	7.3	1.0	8.0	5.2

Serine	Glutamic acid	Proline	Glycine	Alanine	Valine	Methionine	Isoleucine	Tyrosine	Phenylalanine	Leucine
% of total protein										
4.9	11.1	8.2	11.4	9.9	5.2		2.4	2.4	3.7	6.1
4.4	17.6	4.4	4.6	6.7	6.4	4.8	6.0	3.6	4.7	9.5
					6.4	3.2	9.3		3.9	9.5
3.6 3.1-4.0 4	15.1 13.7-16.4 4	3.1 2.7-3.3 4	4.2 3.7-4.5 4	5.5 4.9-6.0 4	4.5 4.0-4.8 4	3.0 2.6-3.7 5	4.0 3.5-4.5 4	3.1 2.9-3.4 4	3.8 3.2-5.3 5	7.4 6.8-7.9 4
3.9	15.7	3.5	4.9	6.0	4.6	2.8	4.1	2.9	3.5	7.7
3.5 2.5	12.5 12.7	5.2 5.9	8.9 7.5	6.4 6.0	4.2 4.0	2.7 2.8	3.4 3.5	2.7 2.7	3.3 3.3	6.2 6.3
5.0	15.8	3.5	4.3	7.8	6.2	3.2	6.3	3.4	4.1	9.1
	12.1	2.5	2.2	3.0	9.3	2.4	4.0		2.8	4.0
3.6 3.6	13.8	3.2	4.6	5.5	4.4	2.6	3.9	2.8	3.4	7.1
4.7	8.9	11.4	7.2	8.5	4.5	6.0 ^{5/}	2.7	3.8	5.3	6.3
			7.3		5.1	2.7	4.7	3.3	4.1	7.5
4.0	15.4	4.2	6.1	6.2	4.8	2.6	4.2	3.7	3.8	8.0
3.4 3.1-3.8 2	14.0 12.7-15.3 2	3.7 3.2-4.2 2	5.2 4.6-5.8 2	6.0 5.4-6.5 2	4.6 4.1-5.2 2	2.6 2.4-2.8 2	4.2 3.7-4.7 2	3.0 2.7-3.2 2	3.4 3.1-3.7 2	7.4 6.5-8.2 2
					5.1	2.5	4.3	2.0	3.5	5.8
3.8	15.7	3.8	5.6	6.4	5.8	2.7	4.5	4.2	3.7	8.2
4.2	16.0	4.2	4.2	5.9	6.5	3.4 2.9-3.9 2	4.7	3.3	4.2	8.4
5.3 5.3-5.4 2	15.8 15.6-16.0 2	3.6 3.6-3.7 2	4.6 4.5-4.6 2	5.2 5.1-5.2 2	5.8 5.7-5.8 2	2.9 1.8-3.5 3	7.2 7.1-7.3 2	3.8 3.7-3.8 2	4.6 4.5-4.6 2	8.2 8.1-8.3 2
6.5	11.1	5.2	3.9	11.0	7.5	3.8	6.4	4.1	4.2	9.4

Table 4.-- Amino Acid composition of finfishes, whales, and products.

Common and Scientific Name	Description	% of total protein						
		Lysine	Histidine	Cystine	Arginine	Tryptophan	Aspartic acid	Threonine
Eel, Swamp, Field <u>Fluta alba</u>	Muscle Raw	7.1	2.4	1.2	6.6	1.1		5.0
Featherback Notopteridae	Muscle Smoked	9.8	2.1	0.9	6.8	0.8	11.0	4.1
Flounder, Gulf Stream <u>Citharichthys arctifrons</u>	Muscle Raw	7.8	1.8		4.9		8.4	3.6
Flounder, Lemon <u>Pleuronectes microcephalus</u>	Muscle Raw	10.7	3.6		6.8		11.8	5.7
Flounder, Starry, Hirame <u>Paralichthys olivaceus</u>	Muscle Raw	9.9	2.5	0.5	6.2	0.8	4.2	4.6
Flounder, Stone <u>Kareius bicoloratus</u>	Muscle Raw	10.3	2.5		6.2	1.2	10.5	5.6
	Roe Raw	9.4	2.3	1.2	5.4	0.9	8.5	5.2
Flounder, Summer <u>Paralichthys dentatus</u>	Muscle Raw	10.8	2.5		6.4		11.4	4.8
Flounder Bothidae/Pleuronectidae	Muscle Raw	9.3 8.1-10.0 3	2.3 2.2-2.5 3	0.5 0.4-0.6 2	6.0 5.4-6.3 3	1.1 0.7-1.5 3	10.1 8.9-11.0 3	4.4 3.9-4.6 3
	Offal Fishmeal	9.1 6.6-10.0 4	3.6 2 3-6.0 3	1.2 1.0-1.4 2	6.2 6.0-6.3 3	1.2 1.0-1.4 2	10.3 9.4-11.0 3	4.5 4.3-4.6 3
Flyingfish, Tropical Two-winged <u>Exocoetus volitans</u>	Muscle Raw	9.9	3.4	1.3	5.6	1.4 1.2-1.6 2	11.8	4.8
Goby Gobiidae	Muscle Raw	10.4	2.2	1.4	5.1	0.9	12.0	5.1
Goosefish, Monkfish Lophiidae	Muscle Raw	10.4	2.2		6.6	1.2	11.3	4.9
Grouper, Black <u>Mycteroperca bonaci</u>	Muscle Raw	8.3 7.8-9.0 3	1.9 1.8-2.1 3		5.5 5.2-5.8 3		9.1 8.7-9.7 3	3.9 3.7-4.2 3
Grouper, Red <u>Epinephelus morio</u>	Muscle Raw	8.3 8.1-8.6 3	1.9 1.9-2.0 3		5.5 5.4-5.5 3		9.1 8.9-9.3 3	3.8 3.8-3.9 3
Haddock <u>Melanogrammus aeglefinus</u>	Muscle Raw	9.4 6.4-11.0 15	2.1 1.2-3.7 15	1.0 0.4-1.4 12	6.4 5.5-9.2 15	1.2 0.8-1.4 14	8.2 4.2-11.6 11	4.2 3.1-5.8 14
	Canned Steamed & Vacuum-packed	9.4	2.2	1.3	5.5	1.2	10.9	4.7
	Vacuum-packed	9.8	2.2	1.1	5.1	1.2	11.0	4.5
	Unspecified	8.1	1.5		5.2	1.1		4.4

Serine	Glutamic acid	Proline	Glycine	Alanine	Valine	Methionine	Isoleucine	Tyrosine	Phenylalanine	Leucine
% of total protein										
4.1	19.5	3.2		5.2	5.5	2.8	5.8	3.7	4.6	8.4
5.9	14.5	5.3	9.2	6.3	5.7	2.6	6.1	3.0	4.2	8.4
3.4	12.8	2.6	3.8	5.0	3.9	2.6	3.6	2.8	2.7	6.7
6.0	16.6	4.7	5.0	6.9	5.8	3.4	5.5	4.1 ^{5/}	4.8	8.7
4.2	16.8	3.0	4.2	5.8	5.6	2.0	5.0	3.8	3.7	8.2
5.4	15.8	3.6	4.1	6.3	7.0	3.1	5.1	4.2	4.4	9.0
6.3	14.1	6.4	3.6	9.3	7.3	2.4	6.9	4.8	4.5	11.0
4.4	18.8	4.2	5.2	6.4	5.4	3.6	4.9	3.8	4.2	9.3
4.0 3.5-4.3 3	15.8 13.4-17.3 3	2.9 2.7-3.1 3	4.0 3.6-4.4 3	5.6 5.0-6.1 3	5.1 4.1-5.6 3	2.9 2.0-3.9 5	4.5 3.7-4.9 3	3.3 3.0-3.6 4	3.5 3.0-3.9 3	7.8 6.9-8.3 3
4.4 4.1-4.8 3	15.8 13.6-17.3 3	3.8 3.0-5.3 3	5.5 3.9-8.3 3	6.2	4.7	3.2 2.9-3.5 2	4.0	3.2	3.8	7.2
4.3	16.0	3.2	4.5	6.6	5.0	2.4	4.8	3.2 2.5-3.8 2	3.8	8.3
3.8	14.9	3.8	4.2	5.8	5.3	2.2	4.8	3.8	3.8	8.3
5.2	17.5	3.9	4.8	5.9	5.1	4.3	4.7	3.1 2.2-4.0 2	4.2	9.0
3.4	13.9	3.2	3.9	5.3	4.2	2.7	3.8	3.1	3.3	7.3
3.5	14.2	3.4	4.6	5.6	4.2	2.8	3.9	3.0	3.4	7.1
4.2 3.3-6.1 11	14.5 11.1-17.4 11	3.3 2.8-4.3 11	4.3 3.8-5.2 11	9.3 4.8-8.0 11	5.3 4.5-6.3 14	3.1 2.4-4.1 14	5.1 4.2-6.2 13	3.0 2.8-7.8 11	3.8 3.0-4.7 14	7.7 3.8-9.3 14
4.5 5.0	15.4 15.8	3.5 3.6	7.5 4.6	5.9 6.1	5.2 4.9 5.1	3.3 3.3 3.1	5.4 5.4 5.2	3.9 3.8	4.2 4.2 3.7	8.5 8.5 7.6

Table 4.-- Amino Acid composition of finfishes, whales, and products.

Common and Scientific Name	Description	% of total protein						
		Lysine	Histidine	Cystine	Arginine	Tryptophan	Aspartic acid	Threonine
	Cooked							
	Steamed	9.8 8.9-10.7 6	2.0 1.7-2.2 6	0.9 0.8-1.1 6	6.4 5.9-7.0 6	1.2 1.2-1.3 6	9.7 8.9-10.5 6	4.1 3.9-4.7 6
	Fishmeal	10.6 8.6-11.6 4	1.9 2.0	2.0	5.7	1.0 0.9-1.1 2		6.0 4.2-7.8 2
Hake European <u>Merluccius merluccius</u>	Muscle							
	Raw	8.2 8.1-9.2	2.8 2.6-3.1	0.9	5.7 5.6-5.8 2	1.2 1.1-1.2 2		4.8
	Whole							
	FPC	6.7	2.0		6.1		8.4	4.4
Hake Pacific <u>Merluccius productus</u>	Whole							
	Fishmeal	7.8 7.3-8.3 2	2.0 1.9-2.2 2	0.7	5.8 5.1-6.6 2	0.9	9.4 8.3-10.0 2	4.2 4.2-4.3 2
Hake Silver Whiting <u>Merluccius bilinearis</u>	Muscle							
	Raw	9.1	1.7	2.1	5.7	1.0	11.1	4.6
Hake Squirrel <u>Urophycis chuss</u>	Muscle							
	Raw & Freeze-dried	7.6 7.4-7.7 4	1.8 1.8-1.9 4		5.9 5.8-6.1 4		9.4 9.4-9.5 4	4.1 4.1-4.2 4
	Whole							
	Raw & Freeze-dried	7.4 7.3-7.6 4	1.9 1.8-1.9 4		5.9 5.8-6.0 4		9.0 8.5-9.5 4	3.9 3.7-4.1 4
	FPC	8.2 7.7-8.4 4	1.9 1.8-2.0 4	0.9	6.8 6.2-7.1 4	0.9 0.8-1.0 2	10.1 10.0-10.2 3	4.4 4.3-4.5 4
	FPC							
	Of Cooked Fish	7.7	1.9	1.1	6.4	1.2		4.2
Hake Gadidae	Muscle							
	Raw	8.8 8.2-9.8 3	2.5 2.2-3.0 3		5.8 5.5-6.3 3	1.0 1.0-1.0 2	11.0	4.6 4.5-4.8 3
	Whole							
	FPC	8.8 8.3-9.8 3	2.1	1.2 0.8-1.9 3	7.1	1.0 1.0-1.0 2	10.4	4.4 4.3-4.5 2
Halibut, Pacific <u>Hippoglossus stenolepis</u>	Muscle							
	Raw	8.8 8.4-9.3 3	2.5 2.4-2.8 3	1.5	5.8 5.6-5.9 3		9.8 9.1-10.3 3	4.3 4.0-4.6 3
Halibut Pleuronectidae	Muscle							
	Raw	7.7 6.7-9.4 4	2.4 1.7-3.7 4	1.2 1.1-1.4 2	6.8 6.0-8.4 3	1.3 1.0-1.6 4	10.1	4.6
Herring, Atlantic <u>Clupea harengus</u>	Muscle							
	Raw	8.6 7.0-10.3 2	2.7 1.6-3.8 2		6.2 5.1-7.3 2	1.2	11.0	5.3
	Canned	8.4 7.9-9.0 2	2.2		5.5	0.9 0.8-1.0 2	8.6	4.6 4.5-4.7 2

Serine	Glutamic acid	Proline	Glycine	Alanine	Valine	Methionine	Isoleucine	Tyrosine	Phenylalanine	Leucine
% of total protein										
4.1 3.9-4.3 6	13.9 13.0-14.5 6	3.2 2.9-3.5 6	4.2 3.8-4.5 6	5.8 5.6-6.2 6	5.0 4.4-5.7 6 6.0 5.9-6.1 2	3.1 2.9-3.4 6 4.4 4.1-4.6 2	4.9 4.5-5.6 6 6.0 5.7-6.2 2	3.4 2.9-4.1 6	3.7 3.0-4.5 6 4.2 4.1-4.2 2	7.8 7.3-8.6 6 8.2 7.9-9.6 2
4.6				5.3	5.4	2.4 2.2-2.7 2	6.4 4.4-8.3 2	4.2	3.4 3.0-3.8 2	7.2 7.1-7.4 2
4.6	12.6	8.8	7.7	9.7	4.5	2.6	2.5	2.3	3.8	6.7
3.8 3.6-4.1 2	13.8 13.0-14.6 2	4.5 4.4-4.6 2	7.0 6.8-7.2 2	6.2 6.0-6.4 2	4.8 4.3-5.3 2	2.8 2.3-3.2 2	4.2 3.6-4.7 2	3.0 2.6-3.4 2	3.8 3.3-4.3 2	7.2 6.6-7.7 2
4.1	16.3	3.6	4.7	6.4	5.4	3.3	5.0	3.5	4.3	8.5
4.1 4.1-4.2 4	14.2 14.1-14.3 4	4.7 4.6-4.8 4	7.8 7.5-8.2 4	6.5 6.4-6.5 4	4.8 4.6-4.9 4	3.0 2.9-3.1 4	4.2 4.1-4.3 4	3.0 2.9-3.0 4	3.9 3.8-4.0 4	7.1 7.0-7.2 4
4.0 3.8-4.1 4	13.2 12.7-14.1 4	4.4 4.1-4.6 4	7.3 7.0-7.7 4	6.1 5.7-6.5 4	4.6 4.3-4.9 4	2.8 2.6-3.0 4	4.0 3.7-4.2 4	2.8 2.7-3.0 4	3.6 3.3-3.8 4	6.6 6.2-6.8 4
4.5 4.4-4.7 3	15.1 15.0-15.4 3	5.2 4.8-5.7 3	8.4 7.8-9.2 3	6.8 6.6-7.0 3	5.1 5.0-5.1 4	3.3 3.2-3.4 4	4.4 4.4-4.5 4	3.3 3.2-3.4 3	4.1 4.0-4.1 4	7.4 7.4-7.5 4
					5.0	3.1	4.5		4.1	7.2
4.3	17.7	3.5	4.8	6.2	5.2 5.0-5.3 3	2.8 2.4-3.2 3	4.8 4.4-5.5 3	3.1	3.6 3.1-3.9 3	7.8 7.4-8.6 3
4.6	15.4	5.2	8.1	6.8	5.2 5.0-5.3 2	3.4 3.2-3.6 3	4.5 4.4-4.6 2	3.3 3.2-3.4 2	4.1 4.0-4.2 2	7.6 7.3-7.8 2
4.1 4.0-4.3 3	14.2 13.6-14.9 3	3.5 3.4-3.8 3	4.7 4.4-5.2 3	5.6 5.3-6.1 3	5.0 4.7-5.4 3	3.0 2.7-3.7 4	4.3 4.1-4.6 3	3.4 3.2-3.5 3	3.6 3.4-3.9 3	7.7 7.3-8.3 3
5.7	14.4	3.7	4.8	7.7	6.0 6.0-6.0 2	3.8 2.8-4.5 3	6.0 5.9-6.2 2	3.3	3.3 3.0-3.8 4	9.1 8.1-10.3 3
5.6	17.0	4.4	5.1	7.4	6.0	2.0	5.1	4.1	4.7	9.6
	12.9		5.5		5.4 5.1-5.6 2	3.0 2.7-3.2 2	4.8 4.7-4.9 2		3.7 3.6-3.8 2	7.9 7.2-8.6 2

Table 4.-- Amino Acid composition of finfishes, whales, and products.

Common and Scientific Name	Description	% of total protein						
		Lysine	Histidine	Cystine	Arginine	Tryptophan	Aspartic acid	Threonine
	Whole							
	Canned							
	In Oil, Raw	8.0	2.2		5.4	0.8	8.3	4.4
		7.8-8.1	2.0-2.5		5.2-5.5	0.7-0.8		4.3-4.6
		2	2		2	2		2
	Heat Processed	7.8	2.3		5.6	0.8		4.4
	Fishmeal	8.3	2.0	1.2	7.2	0.8	9.4	4.8
		7.9-9.1	1.8-2.2	1.0-1.6	5.6-8.1	0.7-1.1	9.0-9.8	4.0-6.7
		4	3	4	3	4	3	4
	Defatted	8.3	1.9	1.4	7.1	0.8	9.4	4.1
Herring, Atlantic Thread	Muscle							
<u>Opisthonema oglinum</u>	Raw	8.3	3.0		5.0		8.4	3.5
		8.2-8.4	2.8-3.2		4.8-5.3		8.1-8.8	3.4-3.8
		4	4		4		4	4
Herring Pacific	Muscle							
<u>Clupea pallasii</u>	Raw	8.4	2.2	1.1	5.5	0.9	12.0	4.4
		7.2-9.9	2.0-2.7		4.3-6.2	0.7-1.0		3.6-5.1
		3	3		3	3		3
	Dressed							
	Canned							
	In Tomato Sauce	8.6			5.1	1.0		4.4
	Unspecified	8.3	5.0		4.9	1.1		4.0
	Roe							
	Raw	9.1	1.9	1.4	5.5	1.0	9.4	6.3
		9.0-9.2	1.2-2.5	1.2-1.7	4.8-6.0	0.9-1.1	9.0-9.7	5.9-7.1
		2	3	2	3	3	2	3
Herring	Muscle							
Clupeidae	Raw	8.3	2.7	1.4	6.1	1.1	9.5	4.5
		7.0-10.3	1.6-3.7	1.4-1.4	5.1-7.4	0.8-1.4	8.8-11.0	4.0-5.3
		6	6	2	5	5	4	5
	Fishmeal	6.0	1.6	1.0	4.6		7.9	4.4
	Whole							
	Fishmeal	7.8	2.0	1.3	6.6	1.0	9.1	4.4
		6.0-9.2	0.6-3.0	0.6-2.6	5.0-11.9	0.8-1.6	7.7-11.2	3.3-5.3
		19	20	14	19	11	12	17
	FPC	11.5	2.4	1.1	7.6	1.1	11.2	6.0
		7.9-15.0				0.8-1.4		5.2-6.7
		5				2		2
Katsuo	Muscle							
<u>Euthynnus (Katsuwonus) vagans</u>	Raw	10.3	4.4		7.1	1.1	9.0	4.5
		9.1-11.2	3.6-5.7		6.3-8.7	0.6-1.4	6.3-10.3	2.2-5.8
		3	3		3	3	3	3
Lance, Sand	Whole							
<u>Ammodytes americanus</u>	Fishmeal	8.0	2.3		6.3	1.0	9.7	4.4
Ling	Muscle							
Molvidae	Raw	10.4	1.6	1.4	6.4	0.9	8.6	4.6
		9.5-11.4	1.4-1.9	1.1-1.8	5.9-6.9		7.0-10.3	
		2	2	2	2		2	
Loach, Weatherfish	Muscle							
<u>Misgurnus anguillicaudatus</u>	Raw	7.3	1.9	1.0	6.9	1.2	7.7	2.8

Serine	Glutamic acid	Proline	Glycine	Alanine	Valine	Methionine	Isoleucine	Tyrosine	Phenylalanine	Leucine
% of total protein										
	12.8		5.0		5.0	2.8	4.6		3.4	7.0
					5.0-5.1	2.7-2.8	4.4-4.8		3.3-3.6	6.9-7.0
					2	2	2		2	2
					5.1	2.7	4.9		3.6	7.3
4.2	12.2	4.3	5.8	7.0	5.6	2.9	5.6	3.2	3.8	7.4
3.7-4.6	11.8-12.9	3.9-4.6	5.5-6.3	6.1-7.5	5.3-5.9	2.5-3.4	4.6-6.7	2.9-3.3	3.6-4.1	6.9-7.6
3	3	3	3	3	4	4	4	3	4	4
4.1	11.4	4.2	6.3	7.6	5.4	2.6	6.2	3.0	3.6	7.1
3.2	13.2	3.5	4.7	5.4	4.1	2.5	3.6	2.8	3.2	6.8
3.0-3.4	12.6-13.5	3.2-4.2	4.5-4.8	4.9-5.7	3.6-4.3	2.2-2.7	3.5-3.7	2.5-3.0	2.9-3.4	6.8-7.0
4	4	4	4	4	4	4	4	4	4	4
4.8	17.6	3.8	5.0	6.7	5.2	2.6	5.4	2.6	4.0	8.1
					4.5-5.9	2.0-3.5	4.6-6.4	1.8-3.7	3.7-4.5	7.2-9.0
					3	4	3	3	3	3
					5.2	2.7	4.8		3.9	7.4
					4.9	2.6	4.3		3.4	6.2
5.2	12.8	8.0	4.4	8.7	7.4	2.6	6.8	4.2	5.1	10.6
4.7-5.7	12.4-13.3	7.5-8.4	4.3-4.6	7.9-9.5	6.5-7.8	1.8-3.1	6.2-7.7	3.2-5.3	4.8-5.5	10.3-11.3
2	2	2	2	2	3	3	3	3	3	3
4.5	13.4	4.0	5.6	6.9	5.3	2.6	5.0	3.2	3.8	7.6
3.8-5.6	11.4-16.2	3.5-4.4	5.1-6.3	5.8-7.6	4.6-6.0	2.0-3.0	3.6-6.2	2.6-4.1	3.4-4.7	6.9-9.6
3	4	3	4	3	5	5	5	3	5	5
2.8	12.2	3.8	5.8	6.2	5.0	2.4	4.2	2.8	3.6	6.0
4.1	12.7	4.4	6.2	6.4	5.5	2.7	4.9	2.9	3.9	7.6
3.4-5.6	11.2-14.8	3.8-5.8	5.4-7.4	5.5-8.1	4.6-7.0	2.0-3.1	3.4-6.7	1.5-3.6	3.2-4.4	6.1-9.0
12	13	12	14	12	17	18	17	15	17	16
5.3	15.3	5.2	6.8	7.3	5.5	3.2	4.8	3.2	4.2	8.2
					5.2-5.8	2.9-3.4	4.5-5.1		3.8-4.5	7.6-8.7
					2	2	2		2	2
4.3	11.1	3.9	4.0	6.6	8.6	2.8	5.4	3.3	3.8	7.4
2.6-5.3	5.9-14.3	3.6-4.3	3.0-5.3	6.5-6.7	7.2-9.4	1.9-3.5	3.1-6.6	1.5-4.2	2.0-4.9	4.2-9.0
3	3	3	3	2	3	4	3	3	3	3
4.1		4.5	7.4	6.2	5.0	3.1	4.7	3.7	4.0	7.7
4.4	18.6	3.3	3.3	6.8	4.2	3.6	6.1	3.4	4.8	9.7
3.7-5.1	15.4-21.8		2.1-4.2	6.0-7.7	2.3-6.1	3.1-4.0		3.3-3.5	4.1-5.6	9.0-10.4
2	2		2	2	2	2		2	2	2
5.9	9.0	5.9	5.0	6.2	5.3	3.4	3.7	2.7	3.1	6.0

Table 4.-- Amino Acid composition of finfishes, whales, and products.

Common and Scientific Name	Description	% of total protein						
		Lysine	Histidine	Cystine	Arginine	Tryptophan	Aspartic acid	Threonine
Lumpfish <u>Cyclopteridae</u>	Eviscerated & Beheaded							
	Raw	6.0	1.5		5.6		8.1	4.0
	Roe			*				
	Raw	6.1	2.2		5.3		8.2	4.5
Maasbanker, Mackerel, Jack <u>Trachurus trachurus</u>	Muscle							
	Raw	8.0 7.6-8.4 2	3.0 2.7-3.4 2	1.9 1.5-2.3 2	6.0 5.9-6.1 2	0.9 0.9-0.9 2	8.8	4.3 4.1-4.6 2
	Whole Fishmeal	8.0	2.6	2.2	6.6	0.9	9.6	4.2
Mackerel, Atlantic <u>Scomber scombrus</u>	Muscle							
	Canned							
	Raw	8.2	4.0		5.6	0.9		4.7
	Heat Processed	7.9 7.7-8.1 2	3.5 3.3-3.7 2		5.6 5.2-5.9 2	0.8 0.7-1.0 2	7.8	4.8 4.6-5.0 2
Mackerel, Indian <u>Rastrelliger neglectus</u>	Muscle							
	Raw	9.3	3.2	2.4	6.3		10.2	4.1
Mackerel, Jack <u>Trachurus japonicus</u>	Muscle							
	Raw	9.8 8.8-10.7 2	2.9 2.3-3.5 2	1.1	6.0 5.1-6.8 2	1.2 1.2-1.3 2	10.0 9.3-10.8 2	4.9 4.2-5.6 2
Mackerel, Jack Carangidae	Muscle							
	Raw	8.3 7.6-8.8 3	6.0 3.6-8.0 3	1.0 0.8-1.1 2	5.2 4.9-5.6 3	1.4 1.3-1.4 2	9.0 8.4-9.3 3	4.0 3.8-4.1 3
Mackerel, Pacific Chub <u>Scomber japonicus/colias</u>	Muscle							
	Raw	9.2 8.2-10.0 4	3.2 1.4-5.2 4	1.1 0.8-1.4 2	6.0 5.2-6.7 4	1.2 1.0-1.4 4	9.9 8.2-11.5 4	5.0 4.4-5.2 4
	Canned							
	Raw	8.8	5.5		5.5	1.1		4.4
	Heat Processed	8.2 7.9-8.4 2	5.4 5.1-5.6 2		5.0 4.6-5.5 2	1.0 1.0-1.0 2	8.0	4.4 4.2-4.5 2
	Roe							
	Raw	8.4	3.0	1.5	6.1	1.0	8.0	5.0
Mackerel, Spanish, Japanese <u>Scomberomorus niphonius</u>	Roe							
	Raw	9.4	2.8	1.4	6.5	1.1	8.2	5.9
Mackerel Scombridae	Muscle							
	Raw	7.4 5.6-8.5 6	3.7 1.0-5.6 6	1.0 0.8-1.3 3	5.0 3.3-5.7 5	1.2 0.9-1.5 4	8.7 7.5-10.9 5	3.9 2.3-4.7 5
	Salted & Dried Fishmeal	7.7 12.9	2.8 3.5	0.9 1.4	5.7 7.3	1.1 1.6	9.1 11.3	4.1 5.8

Serine	Glutamic acid	Proline	Glycine	Alanine	Valine	Methionine	Isoleucine	Tyrosine	Phenylalanine	Leucine
% of total protein										
4.5	13.3	4.6	7.1	3.4	3.7	2.3	3.3	2.2	3.2	6.5
5.5	12.7	4.6	4.9	5.5	4.6	2.4	3.9	2.3	3.8	7.7
3.9	12.6	4.9	7.5	6.3	5.0 4.9-5.0 2	2.6 2.6-2.7 2	4.6 4.4-4.9 2	3.6 2.9-4.3 2	3.3 3.3-3.4 2	6.9 6.8-7.1 2
4.2	13.4	4.0	7.2	6.4	5.2	2.6	4.6	2.9	3.5	7.4
	11.6		7.2		5.6 5.2 5.0-5.3 2	2.7 2.8 2.8-2.8 2	5.3 4.7 4.2-5.2 2		3.5 3.3 3.1-3.5 2	7.0 7.3 7.3-7.3 2
4.5	15.5	3.3	4.2	6.2	5.6	3.7	5.3	3.7	5.8	8.9
4.2 3.5-4.8 2	15.0 14.1-15.8 2	3.6 3.0-4.1 2	4.6 4.2-5.0 2	6.3 5.4-7.2 2	6.0 5.0-7.1 2	2.6 1.5-3.6 3	5.3 4.5-6.1 2	3.8 2.9-4.6 2	4.2 3.5-4.9 2	8.2 7.2-9.1 2
3.4 3.2-3.5 3	13.0 12.0-14.0 3	3.0 2.9-3.2 3	4.2 4.0-4.4 3	5.3 5.1-5.5 3	4.8 4.4-5.0 3	2.3 2.0-2.7 3	4.2 3.6-4.5 3	2.9 2.8-2.9 3	3.3 3.1-3.5 3	7.1 6.8-7.2 3
4.9 4.8-5.0 3	12.6 11.5-13.4 4	3.6 3.5-3.6 3	4.4 3.8-5.5 4	5.7 5.6-5.9 3	7.1 5.2-7.8 4	3.0 2.7-3.2 5	6.8 4.8-7.4 4	3.9 3.7-4.0 3	4.4 3.8-4.7 4	7.7 7.4-8.2 4
	12.8		5.7		5.4 5.2 5.1-5.4 2	2.8 2.8 2.7-2.8 2	5.3 4.8 4.7-5.0 2		3.9 3.8 3.8-3.8 2	7.6 7.6 7.3-7.9 2
7.2	11.6	5.6	4.4	7.9	6.1	2.9	5.5	5.2	5.2	8.6
7.5	11.6	6.6	4.0	8.8	6.7	3.2	6.4	5.7	5.4	10.3
3.6 2.2-4.9 4	13.2 12.0-14.7 5	3.2 1.9-3.8 4	5.1 4.2-6.4 5	7.1 5.5-9.4 4	4.9 3.5-6.1 5	2.7 1.9-3.1 6	4.5 3.2-6.0 5	2.8 2.3-3.3 4	3.6 3.2-3.9 5	7.4 6.0-8.8 5
4.2 6.1	13.8 15.6	4.3 5.0	6.1 5.1	7.2 6.8	6.1 6.7	3.0 3.8	6.0 6.4	3.4 3.4	3.8 5.1	8.5 10.2

Table 4.-- Amino Acid composition of finfishes, whales, and products.

Common and Scientific Name	Description	% of total protein						
		Lysine	Histidine	Cystine	Arginine	Tryptophan	Aspartic acid	Threonine
	Whole							
	Raw	6.1	2.4	1.2	6.4			4.6
	Fishmeal	7.3	2.6	0.9	5.6	0.8	8.8	4.2
Marlin, White <u>Tetrapturus albidus</u>	Muscle							
	Raw	7.1	1.7		3.8		7.3	3.1
Marlin Istiophoridae	Muscle							
	Raw	8.4	8.2		5.0	1.3	8.8	4.4
		7.7-9.1	7.8-8.8		4.3-5.7		8.3-9.3	3.8-5.3
		4	4		4		4	4
Menhaden, Atlantic <u>Brevoortia tyrannus</u>	Whole							
	Raw	9.4	2.2		5.6		10.4	4.4
	Fishmeal	7.7	2.5	0.7	6.0	1.2	8.8	3.8
Menhaden Clupeidae	Whole							
	Fishmeal	8.0	2.5	0.8	6.6	1.0	8.6	4.3
		7.6-8.7	2.0-3.0	0.7-0.9	6.0-7.7	0.8-1.2	8.0-9.1	3.9-4.8
		6	6	4	6	6	4	5
Milkfish <u>Chanos chanos</u>	Muscle							
	Raw with Skin	8.0	1.9	1.1	6.9	1.8		5.3
Mullet, Grey, Boi <u>Mugil speigleri</u>	Muscle							
	Raw	7.9	1.7	0.6	6.6	0.8		5.2
			1.5-1.9	0.5-0.8	6.5-6.6	0.4-1.2		3.3-7.1
			2	2	2	2		2
	Whole							
	Fishmeal	9.2	2.6	1.7	5.7	1.4	11.3	6.4
Mullet, Striped <u>Mugil cephalus</u>	Muscle							
	Raw	10.5	3.1	2.4	7.4		10.4	4.1
		8.9-13.6	3.1-3.2		5.6-10.5		9.7-11.2	4.0-4.2
		3	3		3		2	2
Mullet Mugilidae	Muscle							
	Raw	8.8	2.7	1.4	5.9	1.4	12.0	4.2
		6.7-10.7	1.5-3.7	1.3-1.4	3.7-6.8	1.3-1.4	7.7-14.1	3.2-4.5
		5	5	2	5	2	4	4
	Salted & Dried	8.9	1.9	1.2	5.5	1.0	10.2	4.0
Perch, Climbing, Gourami <u>Helostoma temminckii</u>	Muscle							
	Raw	7.5	1.5	1.2	7.0			4.2
Perch, Climbing, Gourami <u>Osphronemus goramy</u>	Muscle							
	Raw	8.1	2.5	1.7	7.7	1.5		4.4
Perch, Climbing, Gourami <u>Trichogaster pectoralis</u>	Muscle							
	Raw	6.9	0.9	1.4	6.1	0.9		4.6
Perch, Climbing, Gourami <u>Trichogaster trichopterus</u>	Muscle							
	Raw	6.7	1.0	1.0	5.7	0.9		4.2
Pike, Northern <u>Esox lucius</u>	Muscle							
	Raw	7.2	2.2	0.7	7.0	0.8		4.6
Pike Esocidae	Muscle							
	Raw	10.8	1.3	1.5	7.9		8.9	4.3
		10.8-10.9						
		2						

Serine	Glutamic acid	Proline	Glycine	Alanine	Valine	Methionine	Isoleucine	Tyrosine	Phenylalanine	Leucine
% of total protein										
4.1	13.1	4.9	7.3	6.4	4.8 4.8	3.0 2.6	4.7 4.1	7.3 3.0	3.0 3.7	5.4 7.3
3.0	10.8	2.5	3.0	4.0	3.2	2.3	2.9	2.6	2.9	5.9
3.6 3.3-3.8 4	14.3 13.2-16.0 4	3.4 3.0-5.8 4	4.4 3.9-5.5 4	5.7 5.1-6.4 4	5.1 4.4-6.7 4	2.6 2.4-2.7 4	4.3 3.8-5.1 4	3.2 2.7-4.0 4	3.6 3.1-4.0 4	7.6 7.1-8.3 4
4.9	16.5	3.2	4.3	5.8	4.8	3.0	4.2	3.4	3.8	8.2
3.6	12.2	4.5	6.6	6.0	5.0	2.9	4.3	3.2	3.9	7.1
3.7 3.6-3.9 4	12.4 12.2-12.7 4	4.0 2.1-5.0 4	6.8 6.3-7.6 4	6.2 5.9-6.4 4	5.2 5.0-5.8 5	2.8 2.6-2.9 6	5.2 4.1-7.3 5	3.0 2.6-3.3 5	4.0 3.7-4.3 5	7.3 6.8-8.1 5
4.4	17.2	2.7		6.0	5.5	3.1	6.0	3.4	5.3	8.5
					5.9 5.5-6.3 2	3.8 3.1-4.4 2	6.2 5.9-6.6 2	2.8 1.6-3.9 2	3.8 3.3-4.2 2	10.4 9.7-11.2 2
4.5	18.2	4.4	4.9	6.9	6.9	2.8	6.2	3.7	5.0	9.9
3.8 3.7-3.9 2	15.2 15.0-15.3 2	3.5 3.5-3.5 2	5.0 4.9-5.1 2	6.0 5.9-6.1 2	4.8 4.6-4.9 2	2.6 2.6-2.6 2	4.1 4.0-4.2 2	3.0 2.9-3.2 2	3.4 3.3-3.6 2	7.9 7.8-8.0 2
3.8 2.7-4.2 4 5.4	14.6 10.0-16.2 4 13.3	3.4 2.7-3.8 4 4.8	5.0 4.4-5.5 4 7.7	5.9 4.3-6.6 4 6.3	5.0 4.5-5.5 4 6.0	2.8 2.3-3.2 4 2.7	4.5 3.6-5.0 4 6.1	3.2 2.5-3.8 4 3.2	3.7 3.0-4.2 4 4.0	8.0 5.9-8.8 4 8.1
4.4	18.7	3.3		6.1	4.9	2.6	6.1	3.8	3.8	7.3
4.2	17.5	2.9		5.8	5.3	2.7	6.3	4.0	5.1	9.1
4.0	18.8	2.8		6.3	4.8	3.1	5.7	4.0	4.3	9.1
3.7	19.3	2.6		5.9	5.5	3.2	5.7	3.2	4.2	8.8
					5.2	2.9	4.3	2.1	3.9	7.0
3.9	22.3		2.6	6.8	4.4 3.8-5.0 2	3.2 2.8-3.6 2	4.5	3.4	4.0 3.8-4.3 2	11.4 7.3-15.4 2

Table 4.-- Amino Acid composition of finfishes, whales, and products.

Common and Scientific Name	Description	% of total protein						
		Lysine	Histidine	Cystine	Arginine	Tryptophan	Aspartic acid	Threonine
Pilchard, European <u>Clupea pilchardus</u>	Muscle Raw	8.4	2.9	1.2	5.1	1.2		4.7
Pilchard, Japanese <u>Sardinops melanosticta</u>	Muscle Raw	11.0	2.5		6.9	1.3	11.2	5.6
Pilchard, Pacific <u>Sardinops (Sardina) caerulea</u>	Muscle Raw	6.0 4.3-8.1 4	2.8 1.2-4.5 4		4.2 3.0-5.6 4	0.9 0.5-1.3 4	6.7 4.9-8.5 2	3.1 2.5-4.2 3
	Canned	8.7	4.7		5.1	1.0	8.8	4.5
	Canned In Tomato Sauce	8.7	4.7		5.2	1.0		4.4
Pilchard <u>Clupeidae</u>	Muscle Raw	8.1	3.5	2.9	6.4	0.8	10.2	4.6
	Whole Fishmeal	8.1	2.5 2.4-2.6 2	2.4	5.2 5.0-6.4 2	1.0	9.4	4.4
Plaice <u>Pleuronectidae</u>	Muscle Raw	9.6 8.7-10.2 3	2.1	1.1	6.3	1.0	9.9	4.6
Pollack, Saithe, Coalfish <u>Pollachius virens</u>	Muscle Raw	10.6 9.1-11.7 4	2.4 2.0-2.7 2	1.0	6.2 6.0-6.5 2	1.0	11.0 10.2-11.9 2	5.0 4.4-5.7 2
Pollack, Walleye <u>Theragra chalcogramma</u>	Muscle Raw	11.0	2.4		7.0	1.2	6.3	5.8
	Roe Raw	9.0	2.5	1.5	5.6	1.0	8.9	5.2
Pollack <u>Gadidae</u>	Muscle Raw	9.2 8.7-9.6 2	2.3 2.2-2.4 2	0.8	7.0 6.6-7.4 2	1.0 0.9-1.2 2	10.7	5.0 4.5-5.6 2
	Dried	7.8	1.8	1.8	6.9	1.2	9.1	5.1
	Roe Raw	8.7	2.5	1.6	5.5	1.0	9.1	5.4
Ratfish <u>Chimaera monstrosa</u>	Muscle Raw	6.2	1.5		4.4		6.9	3.5
Ray, Eagle <u>Myliobatidae</u>	Muscle Salted & Dried	8.3	2.1	1.0	6.6	0.8	9.1	3.9
Redfish, Ocean Perch <u>Sebastes marinus</u>	Muscle Raw	9.2 9.1-9.2 2	2.1 2.0-2.2 2	1.1	5.9 5.7-6.1 2	1.0	10.6 10.5-10.6 2	4.6 4.5-4.8 2
	Whole Fishmeal	9.1 6.4-10.8 3	2.0 1.7-2.3 3	1.1 0.7-1.5 2	6.4 6.1-6.7 3	1.0 1.0-1.0 2	8.5 8.4-8.6 2	4.1 3.9-4.2 3
	Offal Fishmeal	7.9	2.3	1.8	6.7	1.0	9.3	4.3

Serine	Glutamic acid	Proline	Glycine	Alanine	Valine	Methionine	Isoleucine	Tyrosine	Phenylalanine	Leucine
% of total protein										
					5.1	2.8	4.5	4.4	4.0	6.9
5.1	14.7	4.0	5.6	7.3	7.4	3.0 2.5-3.6 2	6.0	4.4	4.7	9.3
	9.6 7.0-12.2 2		4.2 2.9-5.4 2		3.7 2.9-5.2 3	1.9 1.4-2.8 3	3.2 2.6-4.5 3		2.6 2.1-3.7 3	5.1 3.9-7.2 3
	13.4		5.6		5.6	3.0	5.1		3.8	7.2
					5.4	2.9	4.6		3.8	7.6
4.6	12.3	3.7	6.9	6.4	6.2	2.9	4.9	3.3	4.5	7.8
4.2	12.6	4.5	6.1	6.0	6.0 5.7-6.4 2	3.0 2.9-3.0 2	4.8 4.7-4.9 2	3.4	4.0	7.8 7.8-7.8 2
6.0	15.1	3.7	5.4	8.1	5.7	2.8	5.9	3.2	3.9	8.3
5.0 4.6-5.5 2	15.8 14.5-17.2 2	3.8 3.4-4.2 2	4.8 4.3-5.2 2	7.2 6.5-7.9 2	6.0 5.8-6.1 2	3.3 3.0-3.6 2	5.6 5.1-6.2 2	3.5 3.3-3.7 2	4.0 3.8-4.3 2	8.6 8.1-9.1 2
5.3	15.9	3.8	5.0	5.9	5.7	3.6	7.2	3.9	4.3	8.3
6.9	13.0	6.0	3.5	8.2	6.9	2.3	6.3	4.6	4.3	9.9
4.5	16.0	3.8	4.5	6.1	4.9 4.8-5.0 2	3.2 3.0-3.5 2	5.1 5.0-5.2 2	3.8	3.6 3.1-4.2 2	7.8 7.4-8.3 2
5.6	13.8	6.9	1.8	4.5	7.7	1.0	4.6	4.8	4.3	9.4
7.2	13.7	6.0	3.8	8.3	7.0	2.4	6.1	4.3	4.4	9.8
3.0	11.8	2.9	3.5	4.5	3.4	2.1	3.5	2.4	3.3	5.6
5.6	12.9	4.9	8.4	6.4	5.3	2.4	5.6	2.8	3.6	7.9
4.6 4.1-5.2 2	15.6 15.4-15.8 2	3.4 3.4-3.4 2	4.5 4.4-4.6 2	7.2 5.8-8.5 2	5.3 4.7-5.9 2	3.0 3.0-3.1 2	5.3 4.3-6.3 2	3.4 3.2-4.5 2	4.0 4.0-4.0 2	8.3 8.0-8.6 2
4.6 4.4-4.9 2	12.2 11.8-12.6 22	4.4 3.3-5.4 2	9.2 7.8-10.7 2	6.6 6.4-6.8 2	4.7 4.1-5.2 3	2.9 2.7-3.1 3	5.0 2.9-6.3 3	2.7 2.6-2.8 3	3.9 3.4-4.1 3	6.8 5.9-7.4 3
4.5	13.1	4.8	7.9	6.9	4.7	3.1	4.1	3.3	3.9	7.1

Table 4.-- Amino Acid composition of finfishes, whales, and products.

Common and Scientific Name	Description	% of total protein					
		Lysine	Histidine	Cystine	Arginine	Tryptophan	Threonine
Roach <u>Rutilus rutilus</u>	Muscle FPC	4.1	1.4		7.3	0.7	0.6
Rockfish Scorpaenidae	Muscle Raw	8.7 8.4-9.0 3	2.0 1.7-2.2 3		6.1 5.6-6.7 3	9.7 9.4-10.0 3	4.1 3.9-4.3 3
Runner, Blue <u>Caranx crysos</u>	Muscle Raw	9.6	3.3		5.8	10.7	4.8
Sablefish <u>Anoplopoma fimbria</u>	Muscle Raw	8.0 7.5-8.4 2	1.8 1.8-1.8 2		5.8 5.4-6.3 2	11.4 10.0-12.8 2	4.0 3.9-4.0 2
Sablefish Anoplopomatidae	Muscle Raw	8.0 7.7-8.4 3	2.0 1.8-2.2 3		6.0 5.5-6.6 3	10.0 9.2-10.6 3	4.0 3.9-4.0 3
Salmon, Chinook <u>Oncorhynchus tshawytscha</u>	Muscle Canned	8.2 8.0-8.3 2	2.5 2.4-2.6 2		5.6 5.4-5.8 2	0.8 0.7-0.8 2	4.4 4.3-4.5 2
	Roe Raw	8.2 8.2-8.3 2	2.4 2.4-2.5 2		7.4 7.3-7.5 2	0.8 0.8-0.8 2	5.8 5.8-5.8 2
Salmon, Chum <u>Oncorhynchus keta</u>	Muscle Raw	6.7 5.7-7.7 2	2.2 1.3-3.1 2		6.2 5.6-6.8 2	1.0 0.8-1.3 2	5.7
	Roe Raw	8.1 5.7-9.4 5	2.5 1.3-3.0 5	1.5 1.5-1.5 2	6.1 5.5-7.2 5	1.1 0.9-1.3 5	5.5 4.6-6.3 4
Salmon, Coho <u>Oncorhynchus kisutch</u>	Muscle Raw	8.6 6.6-10.7 2	2.6 1.9-3.2 2	1.1 0.8-1.4 2	5.4 5.0-5.7 2	1.4 1.3-1.4 2	4.6
	Roe Raw	8.5 8.3-8.7 2	2.2 1.4-2.7 3		6.7 5.9-7.3 3	0.9 0.7-1.0 3	5.5 4.7-6.1 3
Salmon, Pink <u>Oncorhynchus gorbuscha</u>	Muscle Raw	7.9	2.7	1.3 1.2-1.4 2	5.9	1.2 1.1-1.2 2	4.3
	Roe Raw	8.8 8.8-8.9 2	2.8 2.8-2.9 2		7.0 6.9-7.2 2	1.0 1.0-1.1 2	5.6 5.2-6.1 2

Serine	Glutamic acid	Proline	Glycine	Alanine	Valine	Methionine	Isoleucine	Tyrosine	Phenylalanine	Leucine
% of total protein										
4.5		7.1	2.7		0.6 ^{5/}	2.2		4.6	14.8 ^{5/}	18.0 ^{5/}
4.1 3.7-4.6 3	14.7 13.8-15.5 3	3.9 3.5-4.4 3	6.1 5.2-7.4 3	6.0 5.5-6.4 3	4.5 4.2-4.8 3	2.7 2.6-3.0 3	4.0 3.7-4.2 3	3.0 2.9-3.0 3	3.4 3.3-3.5 3	7.3 7.0-7.4 3
4.1	15.2	3.5	5.1	6.6	5.2	3.1	4.5	3.1	4.1	8.4
3.6 3.4-3.8 2	14.4 13.9-15.0 2	3.0 2.8-3.2 2	4.6 4.6-4.7 2	5.3 5.1-5.5 2	4.6 4.1-5.0 2	2.3 2.8-2.8 2	4.2 3.8-4.6 2	2.8 2.8-2.9 2	3.1 3.0-3.1 2	7.3 6.9-7.7 2
3.9 3.7-4.0 3	13.9 13.1-14.5 3	3.1 2.6-3.5 3	4.9 4.3-5.4 3	5.2 5.1-5.3 3	4.2 4.0-4.5 3	2.8 2.5-3.0 3	3.9 3.6-4.2 3	2.9 2.8-3.0 3	3.1 2.9-3.2 3	6.9 6.4-7.2 3
	12.7		6.5		5.6 5.5-5.7 2	3.1 3.1-3.1 2	5.0 4.8-5.1 2		3.6 3.6-3.7 2	7.4 7.4-7.4 2
					6.6 6.5-6.8 2	2.8 2.8-2.9 2	6.7 6.6-6.8 2		4.8 4.7-4.8 2	9.1 9.0-9.2 2
					6.4	3.0	9.6	1.7	5.7	10.7
5.4 5.1-5.8 2	11.4 10.3-12.4 2	6.4 5.8-6.9 2	2.8 2.8-2.9 2	7.8 7.1-8.5 2	6.9 6.4-7.5 4	2.6 2.0-3.1 4	6.3 5.0-7.4 4	4.2 3.4-4.9 2	4.9 4.4-5.5 2	9.6 8.3-10.2 2
4.0	15.5	3.8	5.4	7.2	6.4	2.9	5.4	3.4	3.0	7.2
					7.1 6.8-7.5 3	2.5 1.9-3.0 3	7.6 6.7-8.2 3	3.0	5.3 4.8-6.3 3	10.4 9.8-11.1 3
3.9	11.9	4.3	6.1	5.8	4.6	2.9	4.0	2.8	3.9	6.6
					7.7 7.3-8.1 2	2.9 2.8-3.0 2	7.2 7.0-7.3 2		4.9 4.9-4.9 2	9.8 9.4-10.3 2

Table 4.-- Amino Acid composition of finfishes, whales, and products.

Common and Scientific Name	Description	% of total protein						
		Lysine	Histidine	Cystine	Arginine	Tryptophan	Aspartic acid	Threonine
Salmon, Sockeye <u>Oncorhynchus nerka</u>	Muscle Raw	10.6	2.9		5.8	1.3 1.3-1.3 2	10.8	6.0
	Roe Raw	8.4 8.2-8.7 2	2.7 2.7-2.7 2		7.2 7.1-7.2 2	0.9 0.8-1.0 2		5.8 5.7-5.9 2
	Muscle Raw	7.8 7.6-8.1 3	2.7 1.9-3.6 3	1.4 1.3-1.4 2	5.6 5.3-5.9 2	1.3 1.2-1.4 2	8.9 8.8-9.0 2	4.2 4.1-4.3 2
Salmon Salmonidae	Muscle Raw	7.8 7.6-8.1 3	2.7 1.9-3.6 3	1.4 1.3-1.4 2	5.6 5.3-5.9 2	1.3 1.2-1.4 2	8.9 8.8-9.0 2	4.2 4.1-4.3 2
	Muscle Raw	8.7 8.1-10.3 5	3.2 2.1-4.7 3	0.9 0.9-1.0 4	5.1 4.9-5.3 4	1.2 0.9-1.4 6	8.5 8.3-8.7 2	4.4 4.0-4.7 4
	Canned In Oil	9.8 9.0-10.7 2		0.8		1.0 1.0-1.1 2		4.7
	Unspecified	9.8 8.4-11.1 2	4.7	0.8	5.1	1.1 1.0-1.2 2	9.0	4.3
	Fishmeal	9.2 8.6-9.8 2	2.6 2.6-2.6 2		5.6 5.4-5.9 2	1.2 1.1-1.3 2		4.2 3.9-4.5 2
	Muscle Raw	9.8	6.2	1.9	5.8	1.0	9.6	5.0
Saury, Pacific <u>Cololabis saira</u>	Muscle Raw	9.8	6.2	1.9	5.8	1.0	9.6	5.0
Scad Carangidae	Whole Fishmeal	7.3	2.6	0.9	5.6	0.8	8.8	4.2
	Whole Fishmeal	7.2 6.7-8.0 3	1.8 1.6-2.0 3	1.3 1.1-1.8 3	6.3 6.0-6.7 3		9.6 8.9-10.6 3	4.4 4.1-4.8 3
Scorpionfish Scorpaenidae	Steamed	9.1	2.0	1.2	6.5		10.8	5.2
Sea, Cucumber <u>Stichopus japonicus</u>	Muscle Raw	4.2 4.2-4.3 2	1.0	1.6	6.2	0.6	9.6	5.1
	Muscle Raw	10.0	2.2		6.3		10.9	4.9
Sea Trout, Spotted <u>Cynoscion nebulosus</u>	Muscle Raw	10.0	2.2		6.3		10.9	4.9
Shad, American <u>Alosa sapidissima</u>	Muscle Raw	8.1 6.4-9.8 2	1.7 1.1-2.3 2	1.2	5.1 4.5-5.7 2	1.2 1.1-1.2 2		4.1
	Muscle Raw	9.2 9.1-9.2 2	2.8 2.5-3.0 2	0.7	6.9 6.6-7.2 2	1.4		4.6 4.4-4.7 2

Serine	Glutamic acid	Proline	Glycine	Alanine	Valine	Methionine	Isoleucine	Tyrosine	Phenylalanine	Leucine
% of total protein										
4.9	14.8	3.7	3.5	6.6	7.4	3.4	5.2	4.1	4.8	9.1
					7.0 6.8-7.2 2	2.8 2.7-3.0 2	7.2 6.8-7.6 2		4.7 4.7-4.7 2	10.0 10.0-10.1 2
3.8 3.7-3.8 2	12.2 11.8-12.6 2	3.7 3.1-4.3 2	5.2 4.4-6.1 2	5.6 5.5-5.8 2	4.6 4.6-4.6 2	2.9 2.7-3.2 3	4.0 3.9-4.0 2	2.9 2.9-2.9 2	3.9 3.4-4.5 3	6.9 6.6-7.2 2
	12.6 12.3-12.8 2		5.1 5.1-5.1 2		5.1 4.9-5.2 4	2.8 2.6-3.1 6	4.5 4.3-4.7 4		3.6 3.4-3.7 4	6.8 6.2-7.2 4
					5.6	3.1 3.1-3.1 2	4.9		3.8	8.6
	13.0				5.2	3.0 2.8-3.2 2	4.6		3.7	7.2
					6.0	3.0	5.1	3.3	4.3	7.8
3.8	13.9	3.7	5.3	6.7	5.1	2.9	4.2	3.0	3.0	6.4
4.1	13.1	4.9	7.3	6.4	4.8	2.6	4.1	3.0	3.7	7.3
4.8 4.6-5.1 3 5.2	13.9 12.9-15.1 3 15.6	5.2 4.9-5.3 3 4.5	9.3 8.8-10.2 3 7.5	6.6 6.2-7.0 3 6.8	4.5 4.1-4.9 3 5.3	2.4 2.2-2.5 3 3.3	3.9 3.5-4.4 3 4.8	2.6 2.2-3.1 3 3.5	3.7 3.4-4.3 3 4.2	6.5 6.0-7.3 3 7.8
4.8	14.4	7.2	15.0	6.9	4.3	1.6	3.4	2.5	2.4	5.1
4.6	17.1	3.8	4.9	6.4	4.9	3.0	4.5	3.7	4.1	8.6
					6.2	2.8	5.0		3.7	7.7
					6.6 6.4-6.7 2	3.4 2.8-3.9 2	8.2	5.0	4.7	11.4 9.3-13.4 2

Table 4.-- Amino Acid composition of finfishes, whales, and products.

Common and Scientific Name	Description	% of total protein						
		Lysine	Histidine	Cystine	Arginine	Tryptophan	Aspartic acid	Threonine
Shark <u>Mustelus fasciatus</u>	Unspecified FPC	7.4	2.1		6.0		9.6	4.4
Shark, Spotted Hound <u>Mustelus manazo</u>	Muscle Raw	10.8	2.9		7.0	1.3	6.2	6.2
Shark, Whitetip <u>Carcharhinus albimarginatus</u>	Muscle Raw	6.5	1.7	0.9	5.2	0.8		5.4
Shark Unspecified	Muscle Raw	13.4 11.5-15.3 2	2.1	1.5 1.4-1.6 2	8.8 8.5-9.2 2	1.4 1.3-1.4 2		3.9
Skate <u>Raja platana</u>	Whole FPC	6.5	4.3		6.4		8.6	4.6
Skate Rajidae	Muscle Raw	9.5 8.3-11.8 2	3.1 2.3-3.8 2	3.0 ^{5/} 1.5-4.5 2	8.0 5.4-10.7 2	1.3 1.3-1.4 2	9.8	5.0 4.7-5.2 2
Smelt Osmeridae	Muscle Raw	9.2 7.2-11.1 2	1.6		5.0		8.2	4.0 3.7-4.3 2
Snapper, Red <u>Lutianus campechanus (blackfordii)</u>	Muscle Raw	8.0 6.7-8.7 3	2.1 1.6-2.3 3	1.3	5.6 5.3-6.2 3	1.2	9.1 9.1-9.1 2	4.0 3.9-4.0 2
Snapper, Yellowtail <u>Ocyurus chrysurus</u>	Muscle Raw	8.9	2.4		5.2		10.0	4.2
Snapper Lutianidae	Muscle Raw	9.2 8.2-10.4 4	2.4 2.1-2.5 3	0.9	5.5 5.3-5.9 4	0.9 0.8-1.0 2	9.4 8.8-10.0 3	4.1 4.0-4.2 3
Sole, Dover <u>Microstomus pacificus</u>	Muscle Raw	9.5	2.4		6.3		10.8	4.8
Sole Soleidae/Pleuronectidae	Muscle Raw	9.8 8.2-10.7 5	2.5 2.0-3.6 5		6.1 4.7-7.1 5		10.6 9.6-11.8 5	5.5 3.9-5.7 5
Spot <u>Leiostomus xanthurus</u>	Muscle Raw	9.0 8.6-9.8 4	2.0 1.9-2.3 4		5.5 5.3-5.8 4		9.7 9.2-10.4 4	4.1 3.9-4.6 4
Sprat <u>Sprattus sprattus</u>	Muscle Cooked Boiled	6.0	1.7		7.2	0.9		0.6 ^{5/}
Stingray, Marbled <u>Dasyatis uarnak</u>	Muscle Raw	19.5 ^{5/}	1.7	1.0	5.2	0.6		4.6
Sucker, Buffalo <u>Ictiobus cyprinellus</u>	Muscle Raw	7.2	2.9	1.9	7.0	1.1	6.6	4.7

Serine	Glutamic acid	Proline	Glycine	Alanine	Valine	Methionine	Isoleucine	Tyrosine	Phenylalanine	Leucine
% of total protein										
4.8	13.8	7.9	6.4	8.5	5.0	3.2	2.3	2.6	4.0	7.7
5.4	15.2	3.7	4.7	6.1	6.1	3.4	7.7	3.6	4.4	8.3
					4.3	2.0	5.4	1.5	3.7	7.9
					6.6	3.5	7.6	4.7 4.4-5.0 2	5.0	10.0
4.9	11.9	9.0	5.6	7.8	4.6	4.6	2.4	4.6	4.9	7.3
4.5	15.9	3.6	4.5	7.3	5.7 5.0-6.4 2	3.0 2.9-3.2 2	6.5 5.2-7.8 2	4.1 4.1-4.1 2	4.5 4.5-4.5 2	8.8 8.3-9.3 2
3.5	12.4	3.0	4.6	4.9	4.8 4.1-5.4 2	2.6 2.5-2.8 2	4.1 3.4-4.8 2	2.7	3.5 3.0-4.0 2	7.2 6.6-7.8 2
3.4 3.4-3.5 2	14.4 14.4-14.5 2	3.2 3.2-3.2 2	4.2 4.2-4.2 2	5.4 5.3-5.4 2	4.4 4.3-4.4 2	2.6 2.6-2.7 2	4.0 3.9-4.0 2	3.0 3.0-3.1 2	3.3 3.3-3.3 2	7.2 7.2-7.3 2
3.6	15.8	3.2	4.0	5.7	4.6	2.8	4.1	3.3	3.6	8.0
3.5 3.4-3.7 3	14.3 13.4-15.2 3	3.5 3.0-4.0 3	4.3 3.9-4.7 3	5.6 5.1-6.1 3	4.8 4.4-5.4 3	2.9 2.7-3.2 3	4.3 4.1-4.5 3	3.2 3.1-3.2 3	3.6 3.3-4.3 4	7.7 7.3-8.2 3
4.7	17.1	3.7	5.4	6.3	4.7	3.1	4.2	3.4	4.1	8.5
4.6 3.7-6.1 5	16.3 14.4-18.7 5	4.4 3.0-4.7 5	5.1 4.1-6.3 5	6.3 5.3-6.9 5	5.1 4.6-5.8 5	3.0 2.6-3.4 5	4.6 4.1-5.5 5	3.3 2.4-4.1 5	4.0 3.5-4.8 5	8.4 7.9-9.2 5
3.8 3.7-4.0 4	15.5 14.6-16.1 4	3.3 3.1-3.6 4	4.4 4.1-4.7 4	5.7 5.4-6.1 4	4.5 4.2-4.9 4	3.0 2.9-3.0 4	4.0 3.8-4.4 4	3.2 3.1-3.5 4	3.6 3.4-4.0 4	7.6 7.2-8.3 4
2.5		5.0	1.8		0.6 ^{5/}	2.3		3.6	14.0	15.5
					3.5	1.6	5.2	1.4	2.7	12.5
4.4	13.9	3.5	4.7	3.8	6.6	3.3	5.7	3.2	3.8	6.9

Table 4.-- Amino Acid composition of finfishes, whales, and products.

Common and Scientific Name	Description	% of total protein						
		Lysine	Histidine	Cystine	Arginine	Tryptophan	Aspartic acid	Threonine
Threadfin, Four-rayed <u>Polynemus tetradactylus</u>	Muscle Raw	19.8 ^{5/}	1.7	2.3	7.4	1.0		8.1
Threadfin Polynemidae	Muscle Salted & Dried	7.4	2.3	1.0	4.9	1.1	8.7	4.1
Tilapia, Cichlid <u>Tilapia macrochir</u>	Muscle Raw	8.9	2.3		6.0	0.4	10.3	4.9
Tilapia, Cichlid <u>Tilapia melanopleura</u>	Muscle Raw	9.1	2.6		6.3	0.4	9.6	4.7
Tilapia, Mozambique Mouthbrooder <u>Tilapia mossambica</u>	Muscle Raw	6.1	1.6	1.3	7.4	1.8		5.1
Trout, Brook <u>Salvelinus fontinalis</u>	Muscle Raw	6.7		1.8	4.6		6.6	4.6
	Roe Raw	9.4	3.1	2.5	8.2	1.0	10.2	5.9
Trout, Rainbow <u>Salmo gairdneri</u>	Muscle Raw	9.7 7.4-13.3 4	3.0 1.9-4.1 4	1.2 0.7-2.0 4	6.2 3.6-7.9 4	1.0 0.9-1.1 3	9.4 9.3-9.6 3	4.0 3.4-4.3 4
	Roe Raw	7.3 7.2-7.4 2	2.6 2.4-2.8 2	0.9 0.8-1.0 2	5.6 5.6-5.7 2	1.0 1.0-1.0 2	9.5 9.2-9.8 2	5.0 4.9-5.2 2
Trout Salmonidae	Muscle Raw	10.1 8.1-12.3 3	2.6 2.2-3.1 2	0.8	6.4 6.1-6.6 2	1.1	10.2 9.3-11.2 2	4.6 4.2-5.0 3
Tuna, Albacore Scombridae	Muscle Raw	8.6	7.5		5.2		9.8	4.6
Tuna, Big Eye <u>Thunnus obesus</u>	Muscle Raw	10.8 10.8-10.9 2	3.3 3.1-3.5 2		5.8 5.6-6.1 2	1.2 1.2-1.2 2	10.6 10.3-10.9 2	5.7 5.5-5.9 2
Tuna, Bluefin <u>Thunnus thynnus</u>	Muscle Raw	9.6 9.3-9.9 2	4.8 4.5-5.0 2	1.3 1.3-1.3 2	5.5 5.4-5.6 2	1.3 1.3-1.3 2	12.0 12.0-12.0 2	4.8 4.8-4.8 2
Tuna, Skipjack <u>Euthynnus pelamis</u>	Muscle Raw	8.4 7.8-8.9 3	3.8 2.5-5.5 3	0.8	4.7 4.3-5.1 2	1.0 0.7-1.2 4	9.0 8.3-9.6 2	3.3 2.7-3.9 3
	Semi-dried	7.4	6.6	1.0	5.1	1.2	10.1	4.2
Tuna, Skipjack Scombridae	Muscle Raw	8.0	8.5	0.8	5.1	1.3	8.4	4.0
Tuna, Yellowfin <u>Thunnus albacares</u>	Muscle Raw	8.5 8.2-8.9 3	5.3 3.3-9.1 3	1.2	5.5 5.2-5.8 2	1.7 1.7-1.7 2	10.2 8.9-11.5 2	3.5 2.7-4.2 3

Serine	Glutamic acid	Proline	Glycine	Alanine	Valine	Methionine	Isoleucine	Tyrosine	Phenylalanine	Leucine
% of total protein										
					6.5	3.7	7.3	1.6	4.5	8.8
4.0	14.2	4.2	6.0	7.8	5.8	3.2	6.2	3.5	4.0	8.9
4.5	15.1	8.9	5.0	6.0	5.2	1.5	4.9	3.3	4.2	8.0
4.5	15.8	9.0	5.5	5.4	4.8	1.0	4.5	3.5	4.2	8.0
4.1	20.2	2.8		6.7	4.9	2.8	5.3	4.2	4.8	7.6
3.9	8.6	4.6	6.2	8.4	5.1	2.1		3.0	3.8	
5.8	12.3	6.6	3.1	9.2	7.8	3.3	5.9	4.3	6.1	10.4
3.9 3.8-4.2 3	14.3 12.3-16.6 3	4.8 3.7-5.8 2	6.1 5.9-6.4 3	6.0 5.8-6.3 3	5.3 5.0-5.9 3	2.9 2.1-3.4 4	4.5 4.2-4.7 4	3.2 2.5-3.9 4	4.3 3.6-5.2 4	7.3 6.9-7.6 4
6.2 6.1-6.2 2	11.8 11.7-12.0 2	6.4 6.1-6.6 2	3.0 2.7-3.4 2	8.2 8.2-8.3 2	6.3 6.3-6.3 2	2.8 2.8-2.9 2	4.8 4.8-4.9 2	4.4 4.1-4.6 2	5.6 5.5-5.7 2	9.6 9.6-9.7 2
4.0 3.9-4.2 2	14.6 12.3-16.9 2	3.6 3.6-3.7 2	5.6 5.3-5.9 2	6.2 5.7-6.6 2	5.3 4.9-5.7 3	2.9 2.6-3.2 3	4.6 4.2-5.1 3	3.1 2.8-3.3 2	4.1 3.8-4.3 3	7.7 7.2-8.6 3
3.9	13.5	3.5	4.9	5.9	5.3	2.7	4.4	2.9	4.0	7.9
4.5 4.3-4.7 2	14.4 13.9-14.6 2	4.0 3.9-4.2 2	4.1 3.7-4.5 2	7.0 6.8-7.2 2	8.0 7.9-8.1 2	3.6 3.5-3.7 2	8.6 8.5-8.7 2	4.0 3.9-4.0 2	4.7 4.4-5.0 2	9.0 8.9-9.2 2
4.2 3.8-4.6 2	14.9 14.9-14.9 2	3.6 3.5-3.8 2	4.3 4.3-4.3 2	6.2 6.1-6.2 2	5.8 5.6-5.9 2	2.6 2.6-2.7 2	5.0 5.0-5.1 2	4.2 4.2-4.3 2	4.5 4.5-4.5 2	9.0 8.8-9.1 2
3.2 3.1-3.2 2	12.7 10.0-16.8 3	3.6 2.5-5.7 3	3.4 2.3-5.7 3	3.6 3.1-4.2 2	8.9 7.4-9.8 3	2.7 2.4-3.2 3	4.1 3.7-4.6 3	3.8	3.1 2.3-4.1 3	5.5 4.5-6.3 3
3.4	12.2	3.4	4.5	5.9	5.1	2.6	4.6	3.7	3.5	8.2
3.3	12.4	2.9	4.3	5.3	5.0	2.2	4.3	2.8	3.3	7.0
4.0 3.5-4.5 2	14.0 13.2-14.7 2	3.1 2.5-3.4 3	3.4 2.6-4.1 3	4.2 2.8-5.3 3	7.2 4.7-9.4 3	2.6 2.5-2.8 3	4.0 3.5-4.4 3	4.2 3.2-5.3 2	3.1 2.3-3.5 3	6.2 4.5-7.3 3

Table 4.-- Amino Acid composition of finfishes, whales, and products.

Common and Scientific Name	Description	% of total protein						
		Lysine	Histidine	Cystine	Arginine	Tryptophan	Aspartic acid	Threonine
	Cooked Broiled & Dried	8.5	3.3			1.7		2.7
Tuna <i>Scombridae</i>	Muscle							
	Raw	8.0	6.8		5.1	1.0	8.5	4.2
		6.9-8.9	4.8-8.5		4.6-5.4	1.0-1.0	7.7-9.6	3.6-4.6
		6	6		6	2	5	6
	Canned							
	In Oil	8.3	5.7		5.3	0.9		4.6
		8.2-8.4	5.6-5.8		5.2-5.4	0.8-0.9		4.3-4.7
		3	3		3	3		3
	Unspecified	8.7	5.5	0.9	5.4	1.0	9.1	4.3
		8.1-9.9	2.6-7.6		5.2-5.7	0.8-1.1	8.6-9.9	4.1-4.5
		6	5		5	5	3	5
	Offal							
	Fishmeal	4.8	2.1	0.4	5.0	0.5	5.0	2.3
		3.9-5.7	1.8-2.4		3.4-6.7	0.5-0.6		
		2	2		2	2		
Tunny <i>Scombridae</i>	Muscle							
	Raw	8.8	8.8	0.9	5.6	1.3	9.3	5.0
		7.4-10.1				1.2-1.6		
		2				3		
Turbot, Arrowtooth <i>Atheresthes stomias</i>	Muscle							
	Raw	8.7	1.9		5.4		9.2	3.9
		8.0-9.2	1.6-2.0		4.2-6.0		7.9-10.0	3.3-4.3
		3	3		3		3	3
Turbot <i>Pleuronectidae</i>	Muscle							
	Raw	9.1	2.6		8.7	0.6	5.8	2.0
Whale <i>Balaenoptera physiculus</i>	Whole							
	Fishmeal	8.8	2.2		8.5		10.6	4.4
Whale, Fin <i>Balaenoptera phippaleus</i>	Muscle							
	Raw	6.4	3.4	0.7	4.6	0.9	8.5	4.1
		6.0-7.0	2.1-4.0	0.5-0.8	4.3-4.9	0.8-1.0	8.1-8.9	4.0-4.3
		3	3	3	3	3	3	3
	Salted	5.7	2.2	0.8	5.3		8.6	4.3
Whale, Sei <i>Balaenoptera borealis</i>	Muscle							
	Raw	8.6	3.4	1.6	5.4	1.2	8.2	4.4
		8.2-9.1	2.5-4.2	1.2-1.9	4.6-6.1	1.0-1.4	7.7-8.8	4.2-4.5
		2	2	2	2	2	2	2
Whale Unspecified	Muscle							
	Raw	9.2	4.1	1.2	5.1	1.4	7.7	4.2
	Whole							
	Fishmeal	6.4	2.3	0.7	5.0	1.2		4.4
		6.3-6.6	2.0-2.6		4.3-5.7	0.9-1.6		3.1-5.6
		2	3		3	2		2
Whitefish, Vendace <i>Coregonus (Leucichthys) albula</i>	Muscle							
	Raw	6.7	1.8	0.7	5.0	1.1		4.6
Whitefish <i>Salmonidae</i>	Whole							
	Fishmeal	7.0	2.0	1.2	6.6	1.0	9.5	4.1
		6.8-7.1	1.8-2.4		6.5-6.8			4.1-4.1
		2	2		3			2
	Viscera							
	Fishmeal	6.8	1.8		5.0		9.6	5.1
Whiting, Blue <i>Micromesistius poutassou</i>	Muscle							
	Raw	9.3	2.7		5.6		7.2	3.2
Wolffish, Atlantic <i>Anarhichas lupus</i>	Muscle							
	Raw	8.9	2.1	1.1	5.8	0.9	10.4	5.0

1/ Average of the means obtained from the literature cited.

2/ Range of the means found in literature cited.

3/ Number of mean values, which were reported in the literature cited.

4/ FPC abbreviation for fish protein concentrate.

5/ Data are questionable, out of line.

6/ Method of processing was not clearly described or the fish was identified only by common name.

Serine	Glutamic acid	Proline	Glycine	Alanine	Valine	Methionine	Isoleucine	Tyrosine	Phenylalanine	Leucine
% of total protein										
		2.5	2.6	2.8	9.4	2.5	3.5		2.3	4.4
3.4 3.2-3.6 4	12.5 10.9-14.3 5	3.1 3.0-3.2 4	4.1 3.8-4.6 5	5.1 4.7-5.7 4	4.8 2.3-3.5 6	2.7 2.3-3.5 7	4.2 3.3-5.1 6	2.9 2.7-3.0 4	3.4 2.8-4.1 6	6.9 6.1-7.9 6
3.6	13.4 12.9-14.4 3	3.6	4.6 4.6-4.6 2	5.9	5.1 5.0-5.2 3 5.4 5.1-5.6 5	2.8 2.8-2.8 3 2.9 2.8-3.3 6	4.6 4.4-4.8 3 4.8 4.6-5.0 5	3.4	3.5 3.4-3.7 3 3.7 3.5-3.9 5	7.1 6.9-7.3 3 7.4 7.0-8.2 5
2.2	6.4	2.9	4.3	3.6	2.8	1.7 1.5-1.7 2	2.4	1.8	2.2	3.8
3.1	15.3	3.7	4.9	5.9	6.2	3.4	5.5	3.9	3.9	8.5
3.9 3.1-4.3 3	15.8 14.6-16.6 3	3.1 2.8-3.3 3	4.2 3.8-4.4 3	5.4 5.0-5.7 3	4.5 4.2-4.7 3	3.2 2.7-3.9 3	4.1 3.9-4.3 3	3.1 2.6-3.4 3	3.4 3.1-3.7 3	7.7 7.1-8.1 3
2.4	6.0	4.2	4.3		6.3	1.9	2.6	1.2	1.7	3.6
4.2	16.1	3.9	4.7	5.5	4.6	3.2	5.0	3.3	4.0	8.5
4.4 4.1-4.6 3 5.0	13.2 13.0-13.4 3 13.7	4.5 3.4-6.6 3 6.2	5.4 3.6-8.6 3 9.0	5.2 4.9-5.6 3 5.0	5.0 5.4-5.7 3 5.3	2.3 2.1-2.3 3 2.2	4.5 4.1-4.8 3 4.1	3.0 2.7-3.1 3 3.0	3.8 3.7-3.8 3 3.7	7.2 6.9-7.5 3 6.9
4.2 3.8-4.6 2	13.0 10.9-15.2 2	4.1 4.0-4.2 2	4.2 4.0-4.3 2	5.0 4.2-5.9 2	4.8 4.7-5.0 2	2.2 1.9-2.4 2	5.3 4.8-5.8 2	3.2 3.2-3.3 2	4.6 4.2-5.0 2	6.8 4.6-9.0 2
3.8	15.3	5.8	4.0	5.9	5.0	2.2 1.9-2.6 2	4.8	3.8	4.2	8.9
					4.5 2.4-5.7 3	2.0 1.4-2.8 3	4.7 4.3-5.2 3	2.0	3.8 3.8-3.9 2	7.7 6.5-8.6 3
					5.4	2.9	4.7	1.6	3.6	6.5
5.2	13.7	5.0		7.7	4.7 4.5-5.2 3	2.6 2.3-3.0 3	4.2 4.1-4.2 3	3.0 2.7-3.4 2	3.4 3.3-3.4 2	6.8 6.6-7.2 3
4.6	14.3	5.1	7.4	7.0	5.5	2.2	4.7	3.2	4.0	7.9
3.2	13.1	2.5	3.5	5.0	4.4	3.3	4.2	3.2	3.8	7.9
5.3	14.6	3.7	5.0	7.8	5.8	2.9	6.1	3.1	4.0	7.8

Table 5.--Amino Acid composition of crustaceans and products.

Common and Scientific Name	Description	% of total protein						
		Lysine	Histidine	Cystine	Arginine	Tryptophan	Aspartic acid	Threonine
Crab, Blue <u>Callinectes sapidus</u>	Muscle Raw	7.3 ^{1/} 6.4-7.6 ^{2/} 5.2/	1.8 ^{1/} 1.5-1.9 ^{2/} 5.2/	1.5 ^{1/} 1.5-1.5 ^{2/} 2.2/	8.6 ^{1/} 7.6-10.0 ^{2/} 5.2/	1.3 ^{1/} 1.1-1.5 ^{2/} 3.2/	8.8 ^{1/} 8.2-10.2 ^{2/} 4.2/	3.7 ^{1/} 3.6-3.8 ^{2/} 4.3/
	Offal Raw	4.8	2.3	0.6	5.9	1.2	7.6	3.3
Crab, Blue, Japan <u>Portunus trituberculatus</u>	Muscle Raw	8.9	2.4	1.6	6.3	1.6	12.0	5.2
Crab, Dungeness <u>Cancer magister</u>	Muscle Raw	8.5 6.3-9.7 3	2.2 1.6-2.6 3	0.6 0.1-1.1 2	11.0 7.3-13.5 3	1.8 1.6-1.9 2	7.7 7.5-8.0 3	3.6 3.5-3.6 3
	Cooked Steamed	6.3	1.6		7.3		8.0	3.5
Crab, King <u>Paralithodes camtschatica</u>	Muscle Raw	7.5	2.2	1.1	9.9	1.0	9.3	4.0
	Offal Meal	4.2	2.5	0.7	6.0	1.2	9.4	4.1
Crab, Red <u>Pleuroncodes planipes</u>	Muscle Raw	6.6	2.6	0.9	7.6	1.6	9.2	3.9
Crab, Red <u>Podaphehalmus vigil</u>	Muscle Raw	9.4	2.4	0.7	8.3		11.5	5.1
	Cooked Steamed	9.1 9.0-9.2 3	2.3 2.1-2.4 3		7.3 6.6-8.2 3		11.1 10.6-11.6 3	4.7 4.6-4.8 3
Crab, Snow <u>Chionoectes bairdi</u>	Muscle Canned	8.5	2.2	1.3	9.8	1.1	10.3	4.6
	Cooked Steamed	7.8	1.9		7.9		9.4	4.0
Crab, Tanner <u>Chionoectes tanneri</u>	Muscle Cooked Unspecified ^{4/}	7.2	1.7		11.2		11.6	3.9
Crab Unspecified	Muscle Raw	6.9 4.8-8.9 5	1.9 1.5-2.4 5	1.4 1.1-1.6 2	6.7 5.1-9.9 4	1.2 1.0-1.6 4	10.0 8.9-12.0 3	4.1 3.3-5.2 4
	Meal	5.6 4.8-6.4 2	1.7 1.5-1.9 2		6.4 5.1-7.6 2	1.1 1.0-1.2 2		3.3
Crayfish <u>Astacus leptodactylus</u>	Muscle Raw	5.6 5.6-5.7 2	3.2 3.0-3.5 2	2.0 2.0-2.1 2	3.8 3.5-4.1 2		8.9 8.1-9.7 2	5.8 5.7-6.0 2
	Muscle Raw	7.0 6.9-7.0 2	5.4 5.2-5.6 2	2.4 2.3-2.4 2	5.9 5.7-6.1 2		8.0 7.8-8.2 2	4.6 4.3-4.8 2

Serine	Glutamic acid	Proline	Glycine	Alanine	Valine	Methionine	Isoleucine	Tyrosine	Phenylalanine	Leucine
% of total protein										
3.4 $\frac{1}{4}$ 3.2-3.5 $\frac{2}{3}$	14.5 $\frac{1}{4}$ 13.4-15.7 $\frac{2}{3}$	4.7 $\frac{1}{4}$ 4.3-5.1 $\frac{2}{3}$	7.6 $\frac{1}{4}$ 6.2-8.4 $\frac{2}{3}$	5.8 $\frac{1}{4}$ 5.1-6.7 $\frac{2}{3}$	4.3 $\frac{1}{4}$ 3.8-4.6 $\frac{2}{3}$	2.4 $\frac{1}{4}$ 2.0-2.7 $\frac{2}{3}$	4.1 $\frac{1}{4}$ 3.6-4.4 $\frac{2}{3}$	3.3 $\frac{1}{4}$ 2.8-3.5 $\frac{2}{3}$	3.5 $\frac{1}{4}$ 3.2-3.7 $\frac{2}{3}$	7.0 $\frac{1}{4}$ 6.6-7.7 $\frac{2}{3}$
3.1	10.2	4.3	6.2	4.9	4.5	1.8	3.5	3.4	3.8	5.2
4.9	16.2	4.5	4.7	5.7	5.0	3.0	4.6	4.7	4.8	9.0
3.3 3.2-3.5 3	11.6 11.1-12.3 3	3.1 3.1-3.1 3	5.5 5.0-5.8 3	5.3 5.2-5.4 3	4.8 3.5-5.8 3	2.5 2.1-2.8 3	3.5 3.2-3.8 3	2.9 2.6-3.2 3	3.2 3.0-3.4 3	5.9 5.6-6.0 3
3.5	12.3	3.2	5.0	4.3	3.6	2.1	3.4	3.1	3.1	6.0
3.8	13.1	4.2	6.9	5.6	4.3	2.2	4.2	3.5	3.8	6.9
4.2	11.6	4.8	6.5	4.8	5.2	1.8	4.0	4.1	4.1	5.9
4.0	12.3	4.2	6.0	5.8	7.9	2.1	3.6	9.1	5.0	6.0
4.7	17.8	4.2	5.1	6.0	5.0	3.2	5.0	4.5	4.5	8.9
4.3 4.2-4.5 3	16.7 16.2-17.1 3	4.0 3.8-4.3 3	4.4 4.0-4.7 3	6.1 5.8-6.3 3	4.8 4.7-4.9 3	2.8 2.5-3.1 3	4.9 4.7-5.0 3	4.3 4.1-4.4 3	4.4 4.3-4.4 3	8.6 8.4-8.7 3
4.2	15.9	3.9	5.7	5.5	4.6	3.2	4.8	3.9	4.4	8.2
3.9	14.4	3.4	5.7	5.0	4.1	2.6	4.0	3.5	3.8	7.2
3.8	13.8	4.0	7.0	5.3	4.1	2.3	4.0	3.1	3.5	6.9
4.2 3.8-4.9 3	14.3 13.2-16.2 3	4.0 3.4-4.5 3	5.6 4.7-6.8 3	5.4 4.9-5.7 3	4.6 3.9-5.2 4 5.2	2.2 1.6-3.0 4 1.6	4.0 3.6-4.6 4 3.6	3.8 2.9-4.7 4 4.5	3.8 3.1-4.8 4 3.4	6.7 4.6-9.0 4 4.6
7.3 7.2-7.4 2	8.2 6.6-9.8 2	5.2 5.0-5.5 2	5.0 5.0-5.1 2	8.0 7.9-8.1 2	3.8 3.7-3.8 2	6.8 $\frac{5}{2}$ 6.4-7.2 2		5.3 5.0-5.6 2	5.5 5.4-5.6 2	
4.2 4.2-4.3 2	15.5 15.0-16.0 2	3.0 2.8-3.2 2	3.2 3.1-3.2 2	6.7 6.6-6.8 2	3.2 2.9-3.4 2	1.8 1.8-1.8 2		6.4 6.1-6.6 2	6.6 6.6-6.7 2	

Table 5.--Amino Acid composition of crustaceans and products.

Common and Scientific Name	Description	Lysine	Histidine	Cysteine	Arginine	Tryptophan	Aspartic acid	Threonine
		% of total protein						
Lobster <u>Panulirus japonicus</u>	Muscle Raw	9.5	2.2	1.3	7.4	1.0	12.3	4.4
	Roe Raw	5.7	3.8	1.5	6.9	1.3	12.1	5.9
Lobster Unspecified	Muscle Raw	10.6 6.0-17.6 4	1.9 1.2-2.2 4	1.2 0.9-1.5 3	7.2 6.7-7.7 4	0.6 0.2-0.9 3	10.3 8.4-12.3 3	4.3 3.6-5.3 4
	Muscle Dried	6.3	3.1	2.8	5.0	0.7	14.0	4.3
Shrimp <u>Sergestes arcticus</u>	Whole Raw	7.4	1.8	1.2	7.9	0.9	11.1	4.5
Shrimp, Brine <u>Artemia salina</u>	Whole Raw	7.6	1.8	2.2	6.5	1.0	9.2	4.6
Shrimp, Brown <u>Penaeus aztecus</u>	Muscle Raw	7.1	1.9	1.2	9.5	1.4	9.4	3.6
Shrimp, Fresh Water <u>Caridina nilotica</u>	Whole Raw	6.8	2.3	1.2	7.3	1.2	11.4	4.6
Shrimp, Indian Prawn <u>Penaeus styliferus</u>	Muscle Raw	8.0	1.5	0.7	5.9	1.2		3.7
Shrimp, Opossum, Kuruma <u>Penaeus japonicus</u>	Muscle Raw	8.6 7.8-9.4 2	2.0 1.9-2.2 2	1.2 1.1-1.3 2	7.4 5.9-9.0 2	1.3 1.0-1.6 2	12.7 11.7-13.8 2	4.7 4.1-4.8 2
	Muscle Raw	8.9	1.9		4.8		8.5	3.0
Shrimp, White <u>Penaeus indicus</u>	Muscle Raw	5.4	1.7	0.7	5.4	0.8	9.7	4.2
Shrimp, White <u>Penaeus setiferus</u>	Muscle Raw	7.8 7.6-8.0 2	2.6 1.4-3.8 2	1.8	8.0 5.7-10.2 2	1.2	8.3 7.0-9.6 2	3.3
	Muscle Raw	9.6 6.6-19.8 17	2.0 1.6-3.8 17	1.5 1.1-2.1 6	8.4 5.9-12.9 15	1.0 0.4-1.5 11	9.3 7.0-10.9 10	3.8 3.2-4.7 14
Shrimp Unspecified	Canned	15.1 11.1-18.7 5	1.6 1.3-2.4 5	1.6	9.1 8.5-9.5 4	1.6		3.6 2.8-4.8 5
	Cooked Boiled & Dried Unspecified	9.2 8.8 8.3-9.3 2	2.0 2.1 1.8-2.4 2	1.2	9.1 8.1 6.6-9.6 2	0.9	10.0 13.2	3.8 3.7-4.0 2
Shrimp Unspecified	Dried	9.1 8.1-10.1 2	2.2 2.2-2.3 2	1.2 1.2-1.3 2	7.2	1.6 1.4-1.8 2		4.4
	Meal	5.2 4.8-5.6 2	1.8 1.7-2.0 2		5.6 5.3-6.0 2	0.9	8.5	3.0 2.4-3.5 2

1/ Average of the means obtained from the literature cited.

2/ Range of means found in literature cited.

3/ Number of mean values, which were reported in the literature cited.

4/ Method of processing was not clearly described or the fish was identified only by common name.

5/ Data are questionable, out of line.

Serine	Glutamic acid	Proline	Glycine	Alanine	Valine	Methionine	Isoleucine	Tyrosine	Phenylalanine	Leucine
% of total protein										
4.9	17.0	3.4	4.6	5.9	4.5	3.2	4.1	8.6	4.1	4.7
4.7	12.5	6.7	5.9	4.4	5.8	1.9	4.2	4.5	5.0	7.3
3.9 3.4-4.9 3	14.3 11.4-16.9 3	4.1 3.4-4.8 3	5.0 4.6-5.3 3	5.3 4.8-5.9 3	4.0 2.8-4.6 4	2.8 2.0-3.3 5	4.0 3.8-4.3 4	3.0 0.8-4.1 5	3.6 2.7-4.7 4	8.4 6.2-11.3 4
3.6	15.5	4.0	7.6	5.0	4.0	3.0	3.2	3.7	3.8	6.6
4.1	14.8	4.3	7.8	6.8	4.7	3.0	4.2	3.5	4.6	7.3
4.8	14.2	5.2	5.3	6.9	5.4	2.7	5.3	4.5	4.7	8.0
3.7	12.9	4.5	7.2	6.0	4.4	2.3	4.3	2.4	3.3	7.7
4.4	13.4	4.6	5.2	6.5	5.4	2.9	4.9	4.1	4.4	6.9
					6.2	3.3	8.8	3.9	3.8	9.2
4.5 4.2-4.8 2	16.1 14.7-17.5 2	3.6 3.5-3.7 2	4.9 4.6-5.3 2	5.8 5.6-6.0 2	4.7 4.4-5.1 2	3.1 3.0-3.2 2	4.4 3.8-5.1 2	6.4 4.2-8.6 2	5.3 4.1-6.6 2	6.1 4.4-7.8 2
2.7	14.7	4.4	9.4	8.2	4.6	2.8	4.4	2.8	3.7	7.4
4.2	13.4	5.7	6.4	6.5	5.2	2.9 2.3-3.5 2	4.1	3.6	4.3	6.4
3.4	15.4 15.0-15.8 2	4.4	7.5	5.9	4.3	2.7	3.8	4.0 3.0-4.9 2	3.6	7.5
3.3 2.7-3.9 8	15.0 14.0-16.2 10	3.8 2.7-4.4 8	6.2 3.6-8.8 9	5.9 4.9-6.5 8	4.4 3.4-6.2 14 4.8 4.2-5.7 5	3.1 2.3-4.6 15 3.9 3.5-4.4 5	4.5 3.5-5.6 13 5.2 4.6-6.0 5	3.1 1.0-4.9 13 3.6 4.1-5.0 5	4.1 3.4-5.1 16 4.5 4.1-5.0 5	8.9 6.7-14.3 13 10.9 9.8-11.6 5
4.8 3.8 3.7-4.0 2	14.8 16.5	3.2 3.5	7.3 6.0	5.8 5.4	4.8 4.0	2.9 3.0 2.8-3.2 2	5.6 4.1	3.6 3.8 2.9-4.7 2	4.2 4.0 3.1-4.8 2	7.6 7.7
		3.6		4.6	5.1	3.0	5.6	3.0 2.4-3.5 2	5.2 4.2-6.2 2	
3.9	11.7	4.8	8.2	5.4	4.4 4.1-4.7 2	2.6 1.7-3.5 2	3.6 3.6-3.7 2	5.3	4.6 3.7-5.5 2	5.5 5.4-5.6 2

Table 6.--Amino Acid composition of mollusks and products.

Common and Scientific Name	Description	% of total protein						
		Lysine	Histidine	Cystine	Arginine	Tryptophan	Aspartic acid	Threonine
Abalone <u>Haliotis gigantea</u>	Muscle Raw	5.5 ^{1/} 4.4-6.8 ^{2/} 3 ^{3/}	1.5 ^{1/} 1.4-1.5 ^{2/} 2 ^{2/}	1.3 ^{1/} 1.3-1.3 ^{2/} 2 ^{2/}	8.3 ^{1/} 8.1-8.6 ^{2/} 2 ^{2/}	0.7 ^{1/} 0.7-0.7 ^{2/} 2 ^{2/}	10.4 ^{1/} 9.7-11.1 ^{2/} 2 ^{2/}	3.9 ^{1/} 2.8-4.7 ^{2/} 3 ^{2/}
Abalone <u>Haliotis japonica</u>	Muscle Raw	6.4	1.5	1.2	9.5	0.9	10.2	5.1
Abalone Haliotidae	Muscle Raw	5.0 3.5-6.5 2	1.4 1.3-1.6 2	0.8	6.5 5.4-7.5 2	0.8	8.5 8.4-8.6 2	3.8 3.8-3.8 2
Clam, Arkshell <u>Anadara broughtoni</u>	Muscle Raw	9.1	2.3	1.5	7.0	1.2	11.2	4.7
Clam, Fresh Water, Corbshell <u>Corbicula japonica</u>	Muscle Raw	8.5	2.5	1.6	6.5	1.8	11.9	5.5
Clam, Fresh Water, Corbshell <u>Corbicula leana</u>	Muscle Raw	7.4 6.2-8.6 3	1.7	2.5 2.1-2.9 2	6.2	1.0 1.0-1.0 2		4.7 4.4-5.0 3
Clam, Fresh Water Corbiculadidae	Muscle Raw	7.8 7.4-8.2 2	2.5	1.6	6.5	1.8	11.6	5.3
Clam, Mactra, Gaper <u>Tresus keenae</u>	Muscle Raw	8.4	1.9	1.3	8.3	1.3	11.5	4.7
Clam, Mactra <u>Mactra sulcataria</u>	Muscle Raw	8.1 7.4-8.7 4	1.5 1.4-1.6 2	1.1 0.6-1.4 4	8.3 7.9-8.6 2	0.8 0.8-0.9 4		4.6 3.6-5.1 4
Clam, Mactra, Surf <u>Spisula solidissima</u>	Muscle Raw	8.2	1.7		7.6		12.7	4.3
Clam, Mactra Mactridae	Muscle Raw	7.2 6.5-8.4 4	1.4 1.0-1.9 4	1.3 1.3-1.3 2	9.1 6.5-10.4 4	1.1 0.9-1.3 2	10.2 9.7-11.5 4	4.0 3.7-4.7 4
Clam, Razor Solenidae	Muscle Raw	7.2	1.7		7.4		9.6	4.0
Clam, Softshell <u>Mya arenaria</u>	Muscle Raw	7.3 6.5-8.6 10	1.7 1.3-2.0 10	1.0 0.9-1.1 5	6.7 5.4-7.3 10	1.2 1.1-1.2 9	8.5 7.0-9.7 10	4.1 3.5-4.7 10
	Canned	8.7	1.8	1.0	7.7	1.1	10.0	4.4
	Cooked	7.3	1.9	1.0	7.5	1.1	9.6	4.4
	Steamed	6.5	1.4	1.0	6.5	1.1	7.4	3.9
	Irradiated							
Clam, Venus, Butter <u>Saxidomus giganteus</u>	Muscle Raw	5.2	1.3		6.1		8.4	3.5

Serine	Glutamic acid	Proline	Glycine	Alanine	Valine	% of total protein		Isoleucine	Tyrosine	Phenylalanine	Leucine
5.1 ^{1/} 4.9-5.2 ^{2/}	14.9 ^{1/} 14.0-15.8 ^{2/}	4.6 ^{1/} 4.6-4.7 ^{2/}	6.8 ^{1/} 6.2-7.4 ^{2/}	6.4 ^{1/} 6.1-6.6 ^{2/}	3.6 ^{1/} 2.9-4.2 ^{2/}	1.9 ^{1/} 0.9-2.5 ^{2/}	3.4 ^{1/} 2.6-4.0 ^{2/}	3.7 ^{1/} 3.7-3.7 ^{2/}	3.0 ^{1/} 2.0-3.7 ^{2/}	6.3 ^{1/} 3.6-8.2 ^{2/}	
5.1	15.2	5.2	7.8	6.6	4.4	2.5	4.2	3.5	3.7	8.1	
4.3 3.9-4.6 2	12.5 12.1-12.8 2	3.9 3.0-4.8 2	7.6 6.5-8.6 2	5.9 5.6-6.1 2	3.5 3.4-3.7 2	2.1 1.9-2.2 2	3.2 3.0-3.5 2	2.7 2.6-2.8 2	2.8 2.8-2.9 2	6.1 5.6-6.5 2	
5.2	15.8	3.8	5.8	6.3	5.4	2.7	5.1	3.8	4.6	9.1	
5.1	13.5	4.7	4.9	5.8	6.7	2.8	5.2	4.6	5.1	8.1	
					4.9 4.4-5.7 3	2.4 2.2-2.5 3	6.7 4.5-8.0 3	3.0 2.7-3.3 2	4.0 3.6-4.7 3	7.8 5.5-9.1 3	
5.0	13.2	4.6	4.8	5.7	6.5	2.8	5.0	4.5	4.5	8.4	
5.2	15.8	3.5	4.7	6.8	5.0	3.1	5.2	4.2	4.2	9.3	
					4.4 3.3-5.0 4	2.8 2.4-2.9 4	7.6 5.8-8.9 4	3.5 3.0-4.0 4	4.1 3.4-4.7 4	10.0 7.5-11.7 4	
4.3	15.9	5.6	5.9	6.5	3.7	2.4	4.1	3.2	3.1	7.7	
4.4 4.0-5.2 4	14.5 13.8-15.8 4	3.4 2.9-4.0 4	5.5 5.2-6.3 4	6.2 6.1-6.8 4	3.9 3.4-5.0 4	2.5 2.3-3.1 4	4.2 3.5-5.2 4	3.6 3.3-4.2 4	3.6 3.0-4.3 4	6.4 5.3-6.9 4	
4.6	15.0	3.4	7.0	6.4	3.8	2.3	3.6	3.2	3.2	6.8	
4.2 3.5-4.6 10 4.5	12.4 10.9-13.5 10 11.7	3.3 2.9-3.6 10 3.2	6.7 4.4-7.6 10 4.3	7.1 5.9-8.1 10 5.6	4.2 3.7-4.5 10 4.6	2.3 2.1-2.4 10 2.6	4.2 3.7-5.3 10 4.8	4.0 2.5-6.5 10 3.1	3.1 2.7-3.6 10 3.5	5.5 3.3-7.0 10 7.0	
4.5 3.7	13.3 11.3	3.5 3.0	7.3 7.1	6.5 8.0	4.3 3.7	2.4 2.1	4.1 3.8	3.3 2.8	3.4 3.0	6.7 5.9	
3.7	12.2	2.7	6.1	4.7	3.3	1.7	3.1	2.8	2.4	5.4	

Table 6.--Amino Acid composition of mollusks and products.

Common and Scientific Name	Description	Lysine	Histidine	Cystine	Arginine	Tryptophan	Aspartic acid	Threonine
		% of total protein						
Clam, Venus, Hard <u>Venus lusoria</u>	Muscle Raw	7.7 6.8-8.1 5	1.8 1.4-2.4 3	1.4 1.3-1.7 4	7.6 7.4-7.8 3	1.2 0.8-1.6 4	11.4 11.2-11.5 2	4.5 3.9-5.0 5
Clam, Venus, Japanese Littleneck <u>Tapes (Venerupis) decussatus</u>	Muscle Raw	7.2 5.3-8.2 4	1.4 1.3-1.6 3	2.1 1.9-2.2 3	6.5 4.0-8.2 3	0.9 0.8-1.1 4	7.2	3.7 3.2-4.4 4
Clam, Venus, Northern Quahog, Cherrystone <u>Mercenaria mercenaria</u>	Muscle Raw	5.2 5.1-5.4 2	1.4 1.4-1.4 2		5.8 5.3-6.4 2	1.2	10.2	4.1
Clam, Venus, Shortneck <u>Tapes japonica</u>	Muscle Raw	8.2 7.7-8.6 3	2.2 2.0-2.4 3	1.7 1.6-1.8 3	7.0 6.9-7.3 3	1.3 1.3-1.3 3	11.1 10.4-11.8 3	4.8 4.5-5.0 3
Clam, Venus Veneridae	Muscle Raw	5.2 4.9-5.4 2	1.4 1.4-1.5 2		6.3 6.1-6.5 2		9.6 9.5-9.6 2	4.2 4.0-4.3 2
Clam Unspecified ^{4/}	Muscle Raw	6.5 5.4-7.6 3	1.9 1.5-2.3 2	1.4	6.4 5.3-7.4 2	1.2 1.2-1.2 2	10.5	4.7
Cockle, Atlantic <u>Cardium edule</u>	Muscle Raw	11.2	1.8		5.6	1.2		4.5
Cockle Cardiidae	Muscle Raw	7.9	2.1	1.5	7.5	1.6	11.1	4.8
Mussel <u>Hyriopsis velthuiseni</u>	Muscle Raw	6.8	1.9		8.5	0.8		4.4
Mussel Mytilidae	Muscle Cooked Boiled & Dried	7.7	1.8	1.5	7.3	1.0	9.1	4.3
Octopus <u>Polypus marmoratus</u>	Muscle Cooked Broiled	8.5	3.5			1.1		3.1
Octopus, Devilfish <u>Octopus vulgaris</u>	Muscle Raw	7.4	2.4	1.2 1.0-1.5 2	8.2	1.2	9.9	3.8
Octopus Octopodidae	Muscle Raw	8.7 7.4-10.2 3	2.5 1.6-3.5 3	1.0	7.4 6.8-8.1 2	1.0 0.8-1.2 3	9.9	4.2 3.1-5.5 3
Oyster, Eastern <u>Ostrea virginica</u>	Whole Raw	5.8 5.2-6.4 2	1.9 1.8-2.0 2		6.0 5.7-6.3 2	1.7	9.9	4.2

Serine	Glutamic acid	Proline	Glycine	Alanine	Valine	% of total protein		Isoleucine	Tyrosine	Phenylalanine	Leucine
5.0 4.9-5.1 2	16.2 15.3-17.1 2	3.8 3.4-4.1 2	4.7 4.3-5.1 2	6.2 6.2-6.3 2	4.7 4.2-5.4 5	2.3 1.8-2.8 5	5.0 4.5-5.7 5	4.4 2.9-5.5 4	3.5 2.8-4.6 5	8.1 6.0-9.6 5	
3.8	9.7	2.8	5.7	3.7	4.0 3.2-4.9 4	2.2 1.8-2.5 4	6.0 5.4-6.3 4	4.6 2.6-6.6 3	3.2 2.9-3.4 4	7.8 6.4-8.8 4	
3.6	13.3	3.8	5.3	6.6	3.6	1.9	3.5	2.9	2.4	6.2	
5.1 4.7-5.4 3	14.2 13.6-14.9 3	4.2 4.0-4.6 3	5.3 5.2-5.4 3	5.9 5.7-6.1 3	5.4 5.4-5.5 3	2.9 2.8-3.1 3	5.0 5.0-5.1 3	4.2 4.1-4.2 3	4.4 4.2-4.6 3	8.4 8.1-8.8 3	
4.0 3.7-4.3 2	15.4 14.9-15.8 2	3.4	6.0 5.6-6.5 2	5.8 5.6-6.0 2	4.0 3.8-4.1 2	1.7 1.6-1.8 2	3.6 3.4-3.8 2	2.7 2.1-3.3 2	2.4 2.0-2.9 2	5.9 5.5-6.3 2	
4.5	15.9	3.8	5.0	6.3	4.6	2.2 2.1-2.2 2	4.4	3.3	4.1	7.3	
					4.5	2.2	4.5		4.4	9.0	
4.7	15.8	3.8	4.9	6.3	4.8	2.5	4.7	4.5	4.2	8.6	
4.5	18.4	3.4		5.3	5.5	3.0	6.4	4.2	4.9	8.3	
5.2	11.6	3.5	6.0	5.1	5.1	2.3	5.2	3.7	3.9	6.2	
	11.9	2.4	2.6	3.3	10.2	2.4	3.7	2.6		4.3	
4.3	13.9	2.6	5.4	5.1	4.5	2.2 2.1-2.4 2	4.6	3.4	3.4	7.5	
4.3	12.9 11.9-13.9 2	2.4 2.4-2.5 2	4.0 2.6-5.4 2	4.2 3.3-5.1 2	6.1 3.6-10.2 3	2.1 2.0-2.4 3	4.4 3.6-4.9 3	3.0	3.5 2.6-4.6 3	6.2 4.3-7.6 3	
4.5	14.5	5.1	6.2	6.0	4.0	2.0	3.5	3.8	3.3	6.3	

Table 6.--Amino Acid composition of mollusks and products.

Common and Scientific Name	Description	% of total protein						
		Lysine	Histidine	Cystine	Arginine	Tryptophan	Aspartic acid	Threonine
Oyster, Giant Pacific <u>Ostrea gigas</u>	Whole Raw	6.6 5.5-9.4 5	2.0 1.5-2.9 3	1.4 1.1-1.6 2	6.2 4.7-7.1 3	0.8 0.7-0.9 2	9.2 7.7-10.7 2	3.8 3.2-4.9 5
Oyster Ostreidae	Whole Raw	6.9 5.2-9.4 5	2.0 1.4-2.9 4	1.4	6.6 5.7-7.1 4	0.8	9.4 7.6-10.7 3	4.3 3.9-4.9 3
Squid <u>Decapod mollusca</u>	Muscle Raw	9.0	2.1	1.1	8.6	1.2	10.6	4.5
Squid <u>Loligo ommastrephes</u>	Muscle Raw	7.9	1.6		6.1	0.8	10.1	3.3
Squid, Japanese <u>Ommastrephes sloani pacificus</u>	Muscle Raw	11.4	2.7 2.3-3.1 2	3.9 ^{5/}	7.6 7.0-8.2 2	1.2	11.3 10.9-11.6 2	6.0 5.4-6.5 2
Squid, Long-finned <u>Loligo pealei</u>	Muscle Raw	7.2	1.5		5.7		10.7	3.5
Squid, Oval <u>Sepioteuthis lessoniana</u>	Roe Raw	9.3	2.6	1.3	6.0	1.6	11.1	6.4
Squid, Pacific <u>Loligo opalescens</u>	Muscle Raw	7.5	2.5		6.3		10.9	3.7
Squid Unspecified	Muscle Raw	8.3 6.1-12.1 8	1.9 1.3-3.8 7	1.1 1.1-1.1 2	6.8 4.7-10.9 7	1.3 1.0-1.8 4	8.5 7.6-10.6 5	4.3 3.0-6.6 7
	Dried	7.2	1.7	0.9	7.3	0.8	8.9	3.6
	Whole FPC	8.2	2.3	0.9	6.6	1.2	8.7	3.3
Topshell Trachidae	Muscle Raw	5.3	1.3	0.9	9.3	1.0	9.2	3.8
Turban <u>Turbo cornutus</u>	Muscle Raw	6.7 6.3-7.4 3	1.5 1.4-1.6 2	1.3 1.3-1.3 2	9.0 9.0-9.1 2	0.8 0.8-0.8 2	10.0 9.8-10.3 2	3.8 3.2-4.5 3
Whelk <u>Buccinum verkruzeni</u>	Muscle Raw	7.0	1.6	0.8	9.3	1.0	10.1	4.4
Whelk <u>Neptunea poycostata</u>	Muscle Raw	5.9	1.6	0.4	8.9	0.9	9.6	4.2
Whelk, Oregon Triton <u>Fusitriton oregonensis</u>	Muscle Raw	6.6	1.7		9.3	1.1	10.8	4.6

1/ Average of the means obtained from the literature cited.

2/ Range of the means found in literature cited.

3/ Number of mean values which were reported in the literature cited.

4/ Method of processing was not clearly described or the fish was identified only by common name.

5/ Data are questionable out of line.

Serine	Glutamic acid	Proline	Glycine	Alanine	Valine	% of total protein		Isoleucine	Tyrosine	Phenylalanine	Leucine
4.5 4.0-5.0 2	13.5 10.7-16.2 2	5.3	6.6 4.5-8.7 2	6.0 3.9-8.1 2	4.3 3.4-5.7 5	2.2 1.6-2.9 5		4.9 2.8-8.3 5	2.8 1.3-3.8 4	3.5 2.7-4.7 5	6.7 4.8-8.5 5
4.4 3.9-5.0 3	14.8 13.7-16.2 3	5.4 5.0-5.8 3	6.4 4.2-8.7 3	6.3 4.8-8.1 3	4.7 4.0-5.7 3	2.4 1.0-3.3 4		5.0 3.5-7.0 3	3.2 2.1-3.8 3	3.9 3.2-4.5 3	7.5 6.3-8.5 3
4.2	16.0	5.0	4.8	5.9	4.6	2.7		4.8	2.9	4.2	8.5
4.0	13.0	5.4	4.7	5.4	6.4	2.4		5.0	3.6	3.7	7.0
5.6	14.4 13.9-14.9 2	3.8	4.5	5.8 5.5-6.2 2	5.7 5.5-5.9 2	2.8 2.1-3.6 2		8.1	5.0 4.5-5.5 2	5.8 5.3-6.2 2	11.0 9.1-12.8 2
3.3	13.7	4.7	4.4	5.4	3.0	2.3		3.7	1.8	2.7	6.9
4.9	12.0	4.3	3.3	4.2	5.4	2.6		6.0	5.3	4.1	9.3
3.7	13.2	5.6	5.0	5.5	3.3	2.2		3.7	1.8	2.7	6.9
3.5 2.9-4.2 5	13.6 11.5-16.5 5	4.9 4.3-5.8 5	4.6 4.2-4.8 5	5.4 4.7-5.9 5	3.6 2.9-4.6 7	2.6 2.0-3.2 7		3.9 3.5-4.7 6	2.6 2.2-2.9 5	3.8 3.0-6.0 7	7.0 6.1-8.5 6
4.5	12.8	4.1	6.8	5.9	4.2	2.7		4.8	2.8	3.5	7.3
2.6	12.1	2.4	2.6	4.0	3.5	2.2		3.9	2.4	3.4	6.4
3.9	14.1	4.8	9.6	3.8	3.6	1.9		3.3	2.4	2.8	6.2
4.8 4.5-5.0 2	15.1 14.8-15.4 2	4.8 4.8-4.9 2	7.8 7.2-8.4 2	6.4 6.2-6.6 2	3.9 3.5-4.3 3	2.4 2.1-2.8 3		3.8 3.5-4.2 3	3.3	3.2 2.6-3.7 3	7.2 6.1-8.2 3
4.1	14.0	3.3	5.5	5.4	4.5			4.0	1.8	3.1	7.6
3.8	13.6	3.3	5.6	5.0	4.3	0.2 ^{5/}		3.6	1.8	4.3	7.1
4.4	14.3	4.1	6.6	5.0	1.2			4.1	2.1	3.3	7.5

Table 7.--Selected fatty acids in finfishes and products.

Fish Name	Description	10:0	12:0	14:0	14:1	15:0	16:0	16:1	16:2	17:0	18:0	18:1	18:2	18:3	18:4	20:1	20:2	20:5	22:1	22:2	22:5	22:6	24:1
		% of total fat																					
Anchoveta <u>Engraulis ringens</u>	Whole Raw	0.3	8.4	0.6	1.3	21.7	7.9			1.6	7.2	13.0	3.0				0.6	10.0		0.6	0.9	10.7	
Bass, Sea, Common <u>Nippon spinosus</u>	Muscle Raw			3.0			13.5	7.4			4.4	20.7				4.1		1.6				3.5	
Bream Sparidae	Muscle Raw			1.5		0.5	35.2	5.3			10.5	13.7	0.5	0.3				1.0	2.3		1.2	18.1	
	Cooked																						
	Boiled			0.9		0.4	27.2	3.8			8.8	13.4	0.7	0.3				1.0	3.7		2.9	24.1	
	Roasted			1.6		0.5	35.7	5.8			18.4	15.7	0.6	0.5					5.3		4.1	14.2	
Butterfish <u>Nomeus albus</u>	Muscle Raw			6.4			19.1	7.6			8.0	22.5				0.0		3.9				5.5	
Capelin <u>Mallotus villosus</u>	Whole Raw	0.1	7.1	0.1	0.7	9.1	12.5	0.7	0.2	0.9	11.8	0.9	0.4	1.1	20.4	0.2	6.7	2.5			0.5	3.2	0.7
Carp <u>Hypophthalmichthys nobilis</u>	Muscle Raw						17.0				6.0												
Carp, Grass <u>Ctenopharyngodon idella</u>	Muscle Raw			2.0			15.8				2.2												
Carp, Silver <u>Hypophthalmichthys molitrix</u>	Muscle Raw			0.8			21.3				1.1												
Cod <u>Physiculus japonicus</u>	Muscle Raw			4.1			16.4	8.9			6.1	23.6				5.6		1.3				0.0	
Cutlassfish <u>Trichiurus lepturus</u>	Muscle Raw			3.4			19.3	5.7			5.5	35.2				4.3		1.9				2.2	
Dogfish <u>Etmopterus lucifer</u>	Muscle Raw			2.3			15.9	4.9			3.7	30.7				8.3		7.9				5.1	
Dory, Mirror <u>Zenopsis nebulosa</u>	Muscle Raw			4.2			16.6	5.4			4.9	17.8				4.9		5.0				6.3	
Eel, Snipe, Slender <u>Hemichthys scolopaceus</u>	Muscle Raw			2.1			12.8	5.2			4.4	28.4				9.0		4.5				4.5	
Flounder, Pelican <u>Chascanopsetta lugubris</u>	Muscle Raw			3.6			12.8	5.8			4.1	22.3				7.1		3.4				3.1	
Goldfish, Funa <u>Carassius auratus</u>	Eviscerated & Beheaded Raw			1.1	0.1		26.8	8.0			5.6	41.4	8.6			2.1	0.6	0.3				1.4	
Goosefish, Monkfish <u>Lophius piscatorius</u>	Muscle Raw						9.6				1.3												
Greeneye <u>Chlorophthalmus albatrossis</u>	Muscle Raw			4.2			15.5	5.1			3.6	27.8				6.0		7.2				5.1	

Table 7.--Selected fatty acids in finfishes and products.

Fish Name	Description	10:0	12:0	14:0	14:1	15:0	16:0	16:1	16:2	17:0	18:0	18:1	18:2	18:3	18:4	20:1	20:2	20:5	22:1	22:2	22:5	22:6	24:1
		% of total fat																					
Grenadier <u>Hymenocephalus</u> <u>lethoenemus</u>	Muscle Raw			3.5			17.0	8.4			4.1	28.3			4.6				2.9				1.7
Grenadier <u>Ventrifossa</u> <u>garmani</u>	Muscle Raw			3.5			9.6	4.8			6.3	12.2			4.2				2.2				1.5
Grouper Serranidae	Muscle Raw			2.0		0.4	28.3	3.9			12.9	20.1	0.5	0.3					4.4		6.0	13.2	
	Cooked																						
	Boiled			1.8		0.5	21.4	4.7			9.7	20.7	0.4						5.7		7.1	15.4	
	Roasted			3.3		1.1	28.3	5.9			15.8	16.3	0.6						3.6		3.0	13.2	
Hake Gadidae	Muscle Raw			2.8		0.5	34.6	4.9			11.4	23.7	4.0	0.6					2.5		1.4	9.6	
	Cooked																						
	Boiled			2.1		0.4	34.6	4.7			11.8	18.8	0.5	0.6					3.9		6.1	11.0	
	Roasted			3.2		0.6	26.7	8.3			11.3	22.4	1.3	1.7					6.0		1.2	11.0	
Herring, Atlantic <u>Clupea harengus</u>	Muscle Raw												3.7										
Herring, Pacific <u>Clupea pallasii</u>	Whole Raw	0.2	2.4	0.4			11.2	4.2			4.6	5.8				1.3							
Herring Clupeidae	Muscle Raw			7.6			12.3				0.4												
Lanternfish <u>Diaphus caeruleus</u>	Muscle Raw			4.1			21.6	5.3			6.8	32.6			4.1				1.2				4.9
Maasbanker, Mackerel, Jack <u>Trachurus</u> <u>trachurus</u>	Whole Raw	0.1	2.4				4.4																
Mackerel, Atlantic <u>Scomber scombrus</u>	Muscle Raw	0.1	5.5	0.0	0.5	17.3	5.6			0.3	3.3	14.2	1.6	0.9	1.6	8.8	0.4	6.5	12.8		1.7	12.9	1.5
	Dark meat	0.1	5.7	0.0	0.6	15.7	5.6			0.6	3.3	14.1	1.5	1.1	1.7	9.3	0.4	6.4	13.8		2.2	10.7	1.7
Mackerel, Spotted Spanish <u>Scomberomorus</u> <u>guttatus</u>	Muscle Raw	0.3	10.8	0.4	1.2	27.0	11.0				9.6	14.3	3.0	1.6	0.8	1.5	0.4	3.4	0.5		0.3	9.4	0.3
Menhaden Clupeidae	Whole Raw	6.6- 6.0- 7.3 2	1- 2/	0.0	0.3	13.0- 12.8- 13.1 23/	11.2- 10.4- 12.0- 23/	0.0	0.6	1.6- 2.6 2	3.6- 4.4 2	21.8- 27.6 2	3.2- 4.7 2	3.0- 1.6- 5.1 2	2.9 0.9 13/	3.2- 1.3 2	0.2	13.7- 13.0- 14.2 2	7.1- 13.0- 22/		2.1 8.5- 12.8 2	10.6- 8.5- 12.8 2	
	Eviscerated & Beheaded Raw							4.9	1.0			14.5	1.4	0.6	3.2		0.6	12.5			2.0	8.9	
Mullet, Parsey <u>Mugil parsia</u>	Muscle Raw		6.9	4.6	1.1	28.3	10.6				8.5	8.7		1.6	2.0	1.5	1.0	3.0	0.3		1.0	9.5	1.5
Ratfish <u>Chimaera</u> <u>phantasma</u>	Muscle Raw			1.5			13.3	4.2			5.9	29.8			6.2				1.9				1.0

Table 7.--Selected fatty acids in finfishes and products.

Fish Name	Description	10:0	12:0	14:0	14:1	15:0	16:0	16:1	16:2	17:0	18:0	18:1	18:2	18:3	18:4	20:1	20:2	20:5	22:1	22:2	22:5	22:6	24:1
		% of total fat																					
Salmon, Sockeye <u>Oncorhynchus nerka</u>	Offal Raw			1.5	0.2		13.6	4.2			5.4	4.9				2.0		1.8					
Sardine <u>Sardina (sardinops) ocellata</u>	Whole Raw		0.0	6.4			15.9				1.9												
Sardine, Indian <u>Sardinella longiceps</u>	Muscle Raw			8.1		0.3	27.0	6.8		1.0	3.8	15.4	4.3	0.8	1.7	2:3		10.6	2.9		0.8	8.8	0.8
Scad, Golden <u>Caranx kalla</u>	Muscle Raw		2.1	8.7	0.3	1.1	33.8	5.7			15.1	15.5	1.4	0.7	1.5	0.4		5.0			0.9	4.0	
Sculpin <u>Ereunias gralleator</u>	Muscle Raw			3.3			15.5	6.8			6.3	29.3				1.4		0.0				4.9	
Skate <u>Raja maculata</u>	Muscle Raw						14.0																
Smelt, Lake <u>Osmerus mordax</u>	Eviscerated & Beheaded Raw			3.0	0.2	1.4	17.8	10.2	0.5	0.8	2.6	21.7	0.8	0.3	0.9	1.3	0.2	13.3	0.0		0.6	18.1	0.0
Sole <u>Cynoglossus semifasciatus</u>	Muscle Raw			9.6	0.5	1.6	32.3	9.0			14.0	19.0	1.5	0.7	4.7			1.5			0.1	2.0	
Sole Soleidae/ Pleuronectidae	Muscle Raw			3.2		1.0	31.3	9.3			8.1	16.9	0.6					4.7			4.9	13.5	
	Cooked																						
	Boiled Roasted			3.2 2.9		0.8 1.1	28.8 36.6	11.0 8.4			7.2 9.0	19.5 15.4	0.8 0.5					5.2 3.9			4.8 4.4	11.1 8.9	
Sprat <u>Sprattus sprattus</u>	Whole Raw		0.1	7.6	0.1	0.7	20.8	5.7	0.3	0.3	2.0	17.9	1.4	1.0	2.1	8.6	0.3	5.2	13.7		0.7	8.1	2.0
Trout, Rainbow <u>Salmo gairdneri</u>	Muscle Raw			2.6			20.6	9.3			5.5	19.2	20.6	3.6									
Tuna, Skipjack <u>Euthynnus pelamis</u>	Muscle Raw		0.1	2.0	0.9	1.4	30.5	2.5			16.6	24.0	0.6	0.2	0.7	0.9		10.2			1.0	3.2	

1/ Average of the means obtained from the literature cited.

2/ Range of the means found in literature cited.

3/ Number of mean values, which were reported in the literature cited.

Table 8.--Selected fatty acids in crustaceans and products.

Fish Name	Description	10:0	12:0	14:0	14:1	15:0	16:0	16:1	% of total fat			18:1	18:2	18:3	18:4	20:1	20:2	20:5	22:1	22:2	22:5	22:6	24:1
									16:2	17:0	18:0												
Crab, Blue <u>Callinectes</u> <u>sapidus</u>	Muscle Raw	1.7	1.2	0.6	1.1	13.2	5.1	0.8	1.5	14.6	3.0	0.7				1.3		9.8					
Crab, Dungeness <u>Cancer magister</u>	Muscle Raw	0.3	0.8	0.4	0.3	9.4	4.6	0.7	1.0	7.1	7.8	3.4	7.1	0.8		5.6			0.3				0.9
Shrimp, Brine <u>Artemia salina</u>	Whole Raw		1.4	2.3	0.7	13.5	13.8		1.3	5.9	35.6	6.2				0.1		12.0					
Shrimp, Brown <u>Penaeus aztecus</u>	Muscle Raw		1.0	0.9	0.2	16.3	5.8		2.3	4.4	10.0	7.7	1.7				4.3		0.8		2.8		

Table 9.--Selected fatty acids in mollusks and products.

Fish Name	Description	% of total fat																	
		10:0	12:0	14:0	14:1	15:0	16:0	16:1	16:2	17:0	18:0	18:1	18:2	18:3	18:4	20:1	20:2	20:5	22:1
Abalone	Muscle																		
<u>Haliotis discus</u>	Raw			3.9	2.9	20.9	3.3				5.1	16.4	1.2				8.8		7.3
Abalone	Muscle																		
<u>Haliotis japonica</u>	Raw			4.9	3.2	19.8	4.4				3.9	17.1	1.6	0.9			10.0		8.4
Clam, Fresh Water, Corbshell	Whole																		
<u>Corbicula japonica</u>	Raw			4.7	3.1	20.3	10.7				5.1	8.3	1.9	3.4			8.6		3.9 10.3
Clam, Macra	Muscle																		
<u>Macra sulcataria</u>	Raw			4.0	3.2	29.8	10.5				9.7	8.2		2.0			9.5		4.6
Clam, Venus, Hard	Whole																		
<u>Venus lusoria</u>	Raw			2.1	2.3	18.2	4.9		4.5	4.9	6.7	1.0		4.4			10.0		3.2 16.5
Clam, Venus, Shortneck	Whole																		
<u>Tapes japonica</u>	Raw			2.7	2.6	18.8	9.4			8.9	8.9			3.1			10.9		14.3
Cuttlefish	Muscle																		
<u>Sepiidae</u>	Raw			3.6		13.6				4.8									
Mussel, Blue	Whole																		
<u>Mytilus edulis</u>	Raw			9.1	3.4	30.5	9.3			7.0	7.9	3.9	0.6	5.7	0.5		4.3		0.8 8.5
Mussel	Whole																		
<u>Mytilidae</u>	Raw											10.3	0.0						
Oyster, Common	Whole																		
<u>Ostrea edulis</u>	Raw			8.9	3.8	33.8	6.0		3.0	10.1	6.8	0.8	4.1	1.0	3.3		3.4	1.0	1.3
Oyster, Eastern	Whole																		
<u>Ostrea virginica</u>	Raw			3.5	1.3	28.9	4.2		1.6	3.6	8.2	2.0	3.3	2.6	5.0		11.2	0.3	9.7
Oyster, Giant Pacific	Whole																		
<u>Ostrea gigas</u>	Raw			5.7	2.2	14.5	7.0			3.2	10.9	2.1		4.2			22.8		10.7
Scallop	Muscle																		
<u>Pecten caurinus</u>	Raw	0.5	0.7	1.1	1.6	1.4	13.3	5.2	1.5	1.5	5.1	6.4	0.6	1.7	2.5	2.8	0.9	16.1	2.0 30.7
Scallop, Atlantic Bay	Muscle																		
<u>Aequipecten irradians</u>	Raw	0.3	0.3	2.6	1.0	1.0	14.3	5.5	2.2	1.0	5.6	6.1	3.2	2.1	2.8	4.7	1.8	15.8	3.9 18.1
Scallop, Calico	Muscle																		
<u>Aequipecten gibbus</u>	Raw	0.4	0.4	3.3	0.5	2.7	14.5	4.5	2.2	1.8	6.5	5.5	2.6	1.5	1.8	2.6	1.1	14.0	4.1 19.7
Scallop, Sea Giant	Muscle																		
<u>Pecten magellanicus</u>	Raw	1.9	0.7	1.6	0.9	0.6	14.4	3.6	1.6	1.0	5.9	6.4	1.8	1.4	2.1	3.0	0.8	19.1	3.2 26.8
Turban	Muscle																		
<u>Turbo cornutus</u>	Raw			1.4	4.9	13.6					4.9	6.6	3.5				6.7		8.7

Table 10.--Total and free cholesterol in finfishes, whales, and products.

Common and Scientific Name	Description	Total Cholesterol mg/100 gm	Free Cholesterol mg/100 gm
Anchovy, Pacific <u>Engraulis japonicus</u>	Muscle Dried	374	
Anchovy Engraulidae	Muscle Salted	108	
Argentine, Sea Smelt <u>Argentina semifasciata</u>	Whole Dried	536 ^{1/} 448-625 ^{2/} 2 ^{3/}	
Barracuda <u>Sphyræna schlegeli</u>	Muscle Salted	51	
Bass, Sea, Japanese <u>Lateolabrax japonicus</u>	Muscle Raw	41	
Bass, Sea Serranidae	Muscle Raw	55	
	Roe Raw	588	
Bhatki <u>Nandus nandus</u>	Whole Raw	52	
Bonito, Striped <u>Sarda orientalis</u>	Muscle Raw	146	
Bonito Scombridae	Muscle Raw	37 5-100 4	
	Dried	135	
Bream, Sea, Crimson <u>Evynnis japonicus</u>	Muscle Raw	84	
	Roe Raw	334	
Bream, Sea, Red <u>Chrysophrys major</u>	Muscle Raw	46 33-69 3	
Bream, Sea, Yellow <u>Tilus tumifrons</u>	Muscle Raw	19	
Bream Sparidae	Muscle Raw	60 51-69 2	
Brill Bothidae/Pleuronectidae	Muscle Raw	44	
Butterfish <u>Centrolophus japonicus</u>	Muscle Raw	36	
Butterfish Stromateidae	Muscle Raw	65	
Carp, Chania <u>Labeo gonius</u>	Muscle Raw	38	
Carp, Crass <u>Ctenopharygodon idellis</u>	Muscle Raw	69 50-103 3	
	Roe Raw	719	
Carp, Indian <u>Barbus stigma</u>	Muscle Raw	58	
Carp, Indian <u>Labeo rohita</u>	Muscle Raw	49	
	Whole Raw	47	
Carp, Indian, Puti <u>Barbus sarana</u>	Muscle Raw	56	
Carp, Indian, Puti <u>Barbus (punitus) sophore</u>	Whole Raw	48	
Carp, Katla <u>Catla catla</u>	Muscle Raw	107	
Carp, Mahasole <u>Barbus tor</u>	Muscle Raw	75	
Carp, Silver <u>Hypophthalmichthys molitrix</u>	Muscle Raw	106	

Table 10.--Total and free cholesterol in finfishes, whales, and products.

Common and Scientific Name.	Description	Total Cholesterol mg/100 gm	Free Cholesterol mg/100 gm
	Roe		
	Raw	144	
Carp	Muscle		
Cyprinidae	Raw	75 57-96 3	
	Whole		
	Raw	82	
Catfish, Airbreathing	Muscle		
<u>Clarias magur</u>	Raw	93	
Catfish, Airbreathing	Whole		
<u>Heteropneustes fossilis</u>	Raw	18	
Catfish, Airbreathing Hito	Roe		
<u>Clarias batrachus</u>	Raw	194	
	Whole		
	Raw	21	
Catfish, Fresh Water, Bichua	Muscle		
<u>Pseudoentropius garua</u>	Raw	40	
Catfish, Fresh Water, Butter.			
Pabda	Muscle		
<u>Callichrous bimaculatus</u>	Raw	76	
Catfish, Fresh Water, Dwarf	Muscle		
<u>Macrones cavasius</u>	Raw	61	
Catfish, Fresh Water, Gomna	Muscle		
<u>Rita rita</u>	Raw	46	
Catfish, Fresh Water, Mulley	Muscle		
<u>Wallagonia attu</u>	Raw	94	
Catfish, Fresh Water, Seenghala	Muscle		
<u>Macrones seenghala</u>	Raw	51	
Catfish, Fresh Water, Spotted			
Bullhead	Muscle		
<u>Ictalurus serracanthus</u>	Raw	36	
Catfish, Fresh Water, Striped			
Dwarf	Muscle		
<u>Macrones vittatus</u>	Raw	73	
Catfish, Fresh Water	Muscle		
Ictaluridae	Raw	45	
Catfish, Stinging	Muscle		
<u>Saccobranchus fossilis</u>	Raw	24	
	Whole		
	Raw	18	
Cod, Atlantic	Muscle		
<u>Gadus morhua</u>	Raw	36 28-44 5	48
Cod, Pacific	Muscle		
<u>Gadus macrocephalus</u>	Raw	37	
Cod	Muscle		
Gadidae	Raw	48 35-60 6	
	Cooked		
	Steamed, Salted, and Dried	210	
Crevalle, Jack	Muscle		
<u>Carangoides ajax</u>	Cooked Fried	138	
Croaker, Fusei	Muscle		
<u>Pseudosciaena crocea</u>	Raw	54	
Croaker, Nibe	Muscle		
<u>Nibea mitsukurii</u>	Raw	52	
Dogfish, Spiny	Muscle		
<u>Squalus acanthias</u>	Raw	39	
Dolphin, Mai Mai, Dorado	Muscle		
<u>Coryphaena hippurus</u>	Cooked Broiled Breaded & Fried	107 78	
Bel, Conger, Margintail	Muscle		
<u>Paraconger caudilimbatus</u>	Raw	49	

Table 10.--Total and free cholesterol in finfishes, whales, and products.

Common and Scientific Name	Description	Total Cholesterol mg/100 gm	Free Cholesterol mg/100 gm
Eel, Conger <i>Congridae</i>	Muscle Raw Canned	28 28	
Eel, Fresh Water, American <i>Anguilla bastoniensis</i>	Muscle Raw	10	
Eel, Snake, Murrel <i>Ophicephalus punctatus</i>	Muscle Raw	109	
Eel, Snake, Murrel <i>Ophicephalus striatus</i>	Muscle Raw	44	
Eel, Snake <i>Ophichthidae</i>	Muscle Raw	95	
Eel, Spiny <i>Mastacembelus armatus</i>	Muscle Raw	81	
Eel Unspecified 4/	Muscle Raw Canned	191 132-225 3 132	
Featherback, Chitala <i>Notopterus chitala</i>	Muscle Raw	70	
Flathead <i>Inegocia meerdevoosti</i>	Muscle Raw	22	
Flounder <i>Bothidae/Pleuronectidae</i>	Muscle Raw Dried Roe Raw Whole Raw	48 41-61 3 972 177 266	22
Flying Fish <i>Cypselurus agoo</i>	Muscle Raw	17	
Goatfish, Kumu <i>Parupeneus porphyreus</i>	Muscle Cooked Broiled	46	
Goby, Yellowfin <i>Acanthogobius (Gobius) flavimanus</i>	Muscle Raw	35	
Goosefish, Monkfish <i>Lophius litulus</i>	Muscle Raw	35	
Grunt <i>Pomadasysidae</i>	Muscle Raw Roe Raw Whole Raw	38 112 140	
Gurnard, Red <i>Chelidonichthys kumu</i>	Muscle Raw	55	
Haddock <i>Melanogrammus aeglefinus</i>	Muscle Raw	58 31-90 5	32 27-36 2
Halfbeak <i>Hemirhamphus sajori</i>	Muscle Dried	206	
Halfbeak <i>Exocoetidae</i>	Muscle Dried	681	
Halibut, Atlantic <i>Hippoglossus hippoglossus</i>	Muscle Raw	47 34-60 2	26
Halibut <i>Pleuronectidae</i>	Muscle Raw	34	
Herring, Atlantic <i>Clupea harengus</i>	Muscle Raw Canned	46 140	
Herring, Pacific <i>Clupea pallasii</i>	Muscle Raw	195	
Herring, Round <i>Etrumeus micropus</i>	Muscle Raw Dried	28 460	

Table 10.--Total and free cholesterol in finfishes, whales, and products.

Common and Scientific Name	Description	Total Cholesterol mg/100 gm	Free Cholesterol mg/100 gm
Herring, Round <u>Etrumeus teres</u>	Muscle Raw	192 51-333 2	
Herring Clupeidae	Muscle Raw Cooked Pickled Salted	21 82 70	
	Roe Raw	402 244-650 3	
Lizardfish Synodontidae	Muscle Raw	34	
Loach, Weatherfish <u>Misgurnus anguillicaudatus</u>	Muscle Raw	71	
Mackerel, Atlantic <u>Scomber scombrus</u>	Muscle Raw	80	
Mackerel Scombridae	Muscle Raw Canned	34 29-38 2 60	
Mackerel, Jack <u>Trachurus japonicus</u>	Muscle Raw Dried	32 16-47 2 489	
Mackerel, Jack Carangidae	Muscle Raw	60 35-97 8	
Mullet Mugilidae	Muscle Raw	21	
Pike, Northern <u>Esox lucius</u>	Muscle Raw	89	
Pilchard, Australian <u>Sardinops neopilchardus</u>	Muscle Dried	311	
Plaice Pleuronectidae	Muscle Raw	70	
Pollack, Saithe, Coalfish <u>Pollachius virens</u>	Muscle Raw	58 40-75 2	
Porgy Sparidae	Muscle Raw	52	
Puffer, Swellfish <u>Sphoeroides vermicularis</u>	Muscle Raw	44	
Puffer, Swellfish Tetraodontidae	Muscle Raw Roe Raw	113 281	
Sailfish <u>Istiophorus platypterus</u>	Muscle Raw	6	
Salmon, Chinook <u>Oncorhynchus tshawytscha</u>	Roe Raw	340	
Salmon, Chum <u>Oncorhynchus keta</u>	Muscle Raw Roe Raw	74 380	
Salmon, Coho <u>Oncorhynchus kisutch</u>	Roe Raw	400	
Salmon, Pink <u>Oncorhynchus gorbuscha</u>	Roe Raw	290	
Salmon, Sockeye <u>Oncorhynchus nerka</u>	Muscle Canned Roe Raw	33 390	30

Table 10.--Total and free cholesterol in fishes, whales, and products.

Common and Scientific Name	Description	Total Cholesterol mg/100 gm	Free Cholesterol mg/100 gm
Salmon	Muscle		
Salmonidae	Raw	66 25-95	57
	Canned	6	
	Salted	90 61	
Sardine	Muscle		
Clupeidae	Raw	52 17-88	
	Canned	2	
	In Olive Oil	70	
	In Tomato Sauce	52	
	Unspecified	70	
	Whole		
	Raw	24	
Saury	Muscle		
Scomberesocidae	Raw	19	
Scad	Muscle		
<u>Decapterus lajang</u>	Raw	27	
Scad, Bigeyed	Muscle		
<u>Caranx crumenophthalmus</u>	Cooked		
	Fried	108	
Scad, Round	Muscle		
<u>Decapterus pinnulatus</u>	Cooked		
	Fried	107	
Scorpionfish, Yellow	Muscle		
<u>Scorpaena scropha</u>	Raw	12	
Scorpionfish	Muscle		
Scorpaenidae	Cooked		
	Marinated in Sake	45	
Sea Robin	Muscle		
Triglidae	Raw	32	
	Roe		
	Raw	252	
Shad, Bastard	Muscle		
<u>Konosirus thrissa</u>	Raw	38	
Shad, Indian	Muscle		
<u>Hilsa ilisha</u>	Raw	84	
	Whole		
	Raw	86	
Shark, Blue	Muscle		
<u>Carcharhinus glauca</u>	Raw	5	
Shark, Mackerel, Blue-pointer	Muscle		
<u>Lamna glauca</u>	Raw	44	
Shark, Oceanic Whitetip	Muscle		
<u>Carcharhinus longimanus</u>	Raw	11	
Shark, Thresher	Muscle		
<u>Alopias vulpinus</u>	Raw	6	
Smelt, Pond	Muscle		
<u>Hypomesus olidus</u>	Raw	72	
Smelt, Sweet, Ayu	Muscle		
<u>Plecoglossus altivelis</u>	Raw	45	42
Snapper	Muscle		
<u>Etelis evurus</u>	Raw	41	
Snapper, Red	Muscle		
<u>Lutianus campechanus</u>	Raw	40	
(blackfordii)			
Sole	Muscle		
<u>Cynoglossus arel</u>	Dried	420	
Sole, European	Muscle		
<u>Solea vulgaris</u>	Raw	51	
Sole	Muscle		
Soleidae/Pleuronectidae	Raw	43	
	Dried	594	
Sturgeon	Roe		
Acipenseridae	Raw	376	
Swordfish	Muscle		
<u>Xiphias gladius</u>	Raw	14	

Table 10.--Total and free cholesterol in finfishes, whales, and products.

Common and Scientific Name	Description	Total Cholesterol mg/100 gm	Free Cholesterol mg/100 gm
Trevally <u>Caranx mertensi</u>	Muscle Raw	48	
Trout, Rainbow <u>Salmo gairdneri</u>	Muscle Raw	48 25-70 2	
Tuna <u>Thunnus maccoyi</u>	Muscle Raw	35	
Tuna, Albacore <u>Thunnus alalunga</u>	Muscle Raw	22	
Tuna, Big eye <u>Thunnus obesus</u>	Muscle Raw	92	
Tuna, Black <u>Promethichthys prometheus</u>	Muscle Raw	45	
Tuna, Skipjack <u>Euthynnus pelamis</u>	Muscle Raw Cooked Broiled with Soy Sauce & Sugar Broiled Breaded & Fried Dried Smoked	18 71 84 79 92 102	
Tuna, Skipjack Scombridae	Muscle Raw	37	
Tuna, Yellowfin <u>Thunnus albacares</u>	Muscle Raw Cooked Broiled with Soy Sauce Ray With Soy Sauce	6 96 47	
Tuna Scombridae	Muscle Raw Canned Cooked Broiled Creamed Breaded & Fried Dried Smoked	68 37-94 4 60 84 91 79 92 102	46
Whale Unspecified	Muscle Raw	30	
Whiting, Australian <u>Sillago sihama</u>	Muscle Dried	200	
Whiting Sillagonidae	Muscle Raw	21	
Yellowtail Carangidae	Muscle Raw	90	

^{1/} Average of the means obtained from the literature cited.

^{2/} Range of the means found in literature cited.

^{3/} Number of mean values, which were reported in the literature cited.

^{4/} Method of processing was not clearly described or the fish was identified only by common name.

Table 11.--Total and free cholesterol in crustaceans and products.

Common and Scientific Name	Description	Total Cholesterol mg/100 gm	Free Cholesterol mg/100 gm
Crab, Blue <u>Callinectes sapidus</u>	Muscle Raw	102	
Crab Unspecified	Muscle Raw	142 ^{1/} 140-145 ^{2/} 2 ^{3/}	
Crayfish Unspecified ^{4/}	Muscle Raw	170	
Lobster Unspecified	Muscle Raw Canned	48 208	
Shrimp, Bagda <u>Palaeomon carcinus</u>	Muscle Raw	36	
Shrimp Unspecified	Muscle Raw	158 138-200 4	127
	Cooked		
	Boiled	250	
	Curried with Peppers, Celery, Onions, & Corn- starch	117	
	Fried in Batter with Celery, Onions, & Tomato	122	
	Fried	171	
	Dried	755	

^{1/} Average of the means obtained from the literature cited.^{2/} Range of the means found in literature cited.^{3/} Number of mean values, which were reported in the literature cited.^{4/} Method of processing was not clearly described or the fish was identified only by common name.

Table 12.--Total and free cholesterol in mollusks and products.

Common and Scientific Name	Description	Total Cholesterol mg/100 gm	Free Cholesterol mg/100 gm
Abalone Haliotidae	Muscle Raw Canned	111 98	
Clam, Arkshell <u>Arca inflata</u>	Muscle Raw	84	
Clam, Fresh Water <u>Corbicula atrata</u>	Whole Raw	124	
Clam, Razor Solenidae	Whole Raw	107	
Clam, Venus, Asuri <u>Tapes philippinarum</u>	Whole Raw	87 ^{1/} 21-153 ^{2/} 2 ^{3/}	
Clam, Venus Unspecified ^{4/}	Whole Raw	130 77-190 3	113
Mussel, Blue <u>Mytilus edulis</u>	Whole Raw	63	
Mussel Mytilidae	Whole Raw	55	
Octopus <u>Octopus ocellatus</u>	Muscle Raw	122	
	Roe Raw	260	
Octopus Octopodidae	Muscle Raw Cooked	124	
	Boiled with fermented rice & soybeans	78	
Oyster Ostreidae	Muscle Raw	190 94-327 3	62
Pen Shell <u>Atrina pectinata</u>	Muscle Raw	26	
Scallop Unspecified	Muscle Raw	116 56-175 2	
Snail Unspecified	Whole Raw	86	
Squid Unspecified	Muscle Raw Dried	283 810 614-1005 2	
Top Shell <u>Trochus maculatus</u>	Whole Raw	164	
Top Shell Trochidae	Whole Raw	269	
Turban <u>Turbo cornutus</u>	Muscle Raw	119	

^{1/} Average of the means obtained from the literature cited.^{2/} Range of the means found in literature cited.^{3/} Number of mean values, which were reported in the literature cited.^{4/} Method of processing was not clearly described or the fish was identified only by common name.

Table 13.--Macroelement composition of finfishes, whales, and products.

Common and Scientific Name	Description	Sodium mg	Potassium mg	Calcium mg	Phosphorus mg Per 100 grams	Chlorine mg	Sulfur mg	Magnesium mg
Ainame <u>Hexagrammos otakii</u>	Muscle Raw	84		99	250	174		
Alewife <u>Alosa pseudoharengus</u>	Muscle Raw	110	311		356 ^{1/} 219-492 ^{2/} 2 ^{3/}	134		
	Whole Fishmeal	240	600	5200	2900			150
Alfoncino <u>Beryx splendens</u>	Muscle Raw	110	214	15	220			
Amberjack, Greater <u>Seriola dumerilii</u>	Muscle Raw	52			253	20		
Amberjack, Yellowtail <u>Seriola grandis</u>	Muscle Raw	90	280	30	240			40
Amberjack, Yellowtail <u>Seriola quinqueradiata</u>	Muscle Raw	86	597	9 ^{1/} 8-10 ^{2/} 2 ^{3/}	296 207-384 2			
	Canned In Oil			38	200			
Amberjack Carangidae	Muscle Raw			34 32-35 2	124 102-146 2			
Anchoveta <u>Engraulis ringens</u>	Whole Fishmeal	1100	890	3590 3380-3800 2	2190 2160-2220 2			270
Anchovy <u>Engraulis mystax</u>	Muscle Raw			121	188			
Anchovy <u>Stolephorus indicus</u>	Muscle Raw	146	523					
Anchovy, Ca'Moi <u>Coilia lindmani</u>	Muscle Raw	70	270	144	188			29
Anchovy, European <u>Engraulis encrasicolus</u>	Muscle Raw		278	82	233	30		
Anchovy, Longjaw, Bilis <u>Stolephorus heterolubus</u>	Muscle Raw Cooked Unspecified ^{4/}			26 47	29 43			
Anchovy, Longjaw, Delis <u>Stolephorus commersonii</u>	Muscle Raw Cooked Unspecified, Soaked in Brine Salted & Dried Salted & Fermented Beheaded Raw		511	178 3300 2159 535 479	1690 2350 1360 313 349			

Table 13.--Macroelement composition of finfishes, whales, and products.

Common and Scientific Name	Description	Sodium mg	Potassium mg	Calcium mg	Phosphorus mg Per 100 grams	Chlorine mg	Sulfur mg	Magnesium mg
Anchovy, Mandali <i>Coilia dussumieri</i>	Muscle Raw Salted & Dried			24 143	363 259			
Anchovy, Pacific <i>Engraulis japonicus</i>	Whole Salted & Dried			561	415			
Anchovy, Whitebait <i>Stolephorus tri</i>	Whole Raw			657	419			
Anchovy Engraulidae	Muscle Raw Canned Paste Whole Raw Cooked Boiled & Dried Dried Salted & Fermented Fishmeal Beheaded Dried Eviscerated Salted Salted & Dried	148 6808 1/ 3816-9800 2/ 755 3150 1600-4700 2 1042 885-1200 2 7153 925 870-980 2 5892 1239	 413 1/ 379-447 2/ 2 2/ 200 750 1154 341 710 650-770 2 3825 3700-3950 2 275 1863 589-2600 3 1829 9082 1910	 150 20-279 2 168 2150 220-4080 2 1029 530-2336 3 1330 429-2062 3 3825 3700-3950 2 275 1863 589-2600 3 1829 9082 1910	 242 220-264 2 210 1578 180-2975 2 1045 590-1500 2 1313 1261-1377 3 1863 589-2600 3 1829 9082 1910	5884		300
Argentine, Atlantic <i>Argentina silus</i>	Whole Fishmeal	470	1200	2600	1900		640	240
Barracouta <i>Thysites atun</i>	Muscle Raw	80	360	64 59-70 2	258 247-270 2			40
Barracuda <i>Sphyraena obtusata</i>	Muscle Raw			64	156			
Barracuda <i>Sphyraena schlegelii</i>	Muscle Raw			14				27
Barracuda <i>Sphyraena vulgaris</i>	Muscle Raw				458	130		
Barracuda, Great <i>Sphyraena barracuda</i>	Muscle Raw			70	361			
Barracuda, Guaguanche <i>Sphyraena guachancho</i>	Muscle Raw			25	205			
Barracuda, Pacific <i>Sphyraena argentea</i>	Muscle Raw	132	294	52	200	184		35

Table 13.--Macroelement composition of finfishes, whales, and products.

Common and Scientific Name	Description	Sodium mg	Potassium mg	Calcium mg	Phosphorus mg Per 100 grams	Chlorine mg	Sulfur mg	Magnesium mg
Barracuda, Striped Torcillo <u>Sphyræna jello</u>	Muscle Raw	66	371 307-435 2	34 22-45 2	386 174-598 2			
Barracuda Sphyrænaidae	Muscle Raw	97 46-154 3	224 155-294 2	26 21-30 3	313 190-490 3			
Bass, Sea <u>Diplectrum radiale</u>	Muscle Raw			140	183			
Bass, Sea <u>Paralabrax humeralis</u>	Muscle Raw	30		23	162	47		
Bass, Sea, Black <u>Centropristes striatus</u>	Muscle Raw	68	256		192		357	
Bass, Sea, Cherlo <u>Acanthistius pictus</u>	Muscle Raw			131	114	160		
Bass, Sea, Common <u>Nippon spinosus</u>	Muscle Raw			43	226			
Bass, Sea, Japanese <u>Lateolabrax japonicus</u>	Muscle Raw	112	308	31 12-50 2	126 208-243 2			
Bass, Sea, Kelp <u>Paralabrax clathratus</u>	Muscle Raw				15	183		
Bass, Sea Serranidae	Muscle Raw	67 44-90 3	138	41 27-60 7	215 187-290 7			25
	Cooked Steamed	75	326	47	220	85	233	27
Bass, Temperate, Rabaliza <u>Morone labrax</u>	Muscle Raw			132	408			
Bass, Temperate, Striped <u>Morone saxatilis</u>	Muscle Raw			15	198			
Batfish, Silvery <u>Psettes sebæ</u>	Muscle Raw			54	200			
Big-eye <u>Scombroproops</u>	Muscle Raw	130		32 10-53 2	229 230-258 2			
Billfish <u>Istiophoridae</u>	Muscle Raw	71		7 4-9 3	240 190-331 3			
Blacktail <u>Oblata melanura</u>	Muscle Raw				506	170		
Bloater <u>Coregonus hoyi</u>	Muscle Cooked Grilled	703	446	123	355	1130	308	45

Table 13.--Macroelement composition of fish muscle, per 100 grams

Common and Scientific Name	Description	Sodium mg	Potassium mg	Calcium mg	Phosphorus mg Per 100 grams	Chlorine mg	Sulfur mg	Magnesium mg
Bluefish <u>Pomatomus pedica</u>	Muscle Raw	60	270	30	180			30
Bluefish <u>Pomatomus saltatrix</u>	Muscle Raw			59	436			
Bluefish Pomatomidae	Muscle Raw	68		19	256 241-271 2	76	41	
Bombay Duck <u>Harporhynchus nehereus</u>	Muscle Raw Salted & Dried			19 390	334 608			
Bonito <u>Auxis bisus</u>	Muscle Raw				427	280		
Bonito, Atlantic <u>Sarda sarda</u>	Muscle Raw		296	41 22-60 2	323 278-392 3	100		43 1/ 36-50 2/ 2 3/
Bonito, Pacific <u>Sarda chiliensis</u>	Muscle Raw Cooked Roasted Salted & Dried			28 28-28 2 15 112	246 233-258 2 206 164			
Bonito Scombridae	Muscle Raw Canned			26 23-28 2 146	145 32-258 2			
Bream <u>Roughleyia australis</u>	Muscle Raw	40	230	20	180			20
Bream, Bronze <u>Abramis brama</u>	Muscle Raw Fishmeal Defatted			48 780 890	245 560 650			
Bream, Gilthead <u>Chrysophrys aurata</u>	Muscle Raw				623	570		
Bream, Mud <u>Acanthopagrus berda</u>	Muscle Raw Salted & Dried	89 5189	475 669	15 187	195 280			
Bream, Sea <u>Dentex canariensis</u>	Muscle Raw			20	530			
Bream, Sea <u>Dentex maroccanus</u>	Muscle Raw			20	500			
Bream, Sea, Crimson <u>Evynnis japonica</u>	Muscle Raw			30	275			
Bream, Sea, Red <u>Chrysophrys major</u>	Muscle Raw			9				26

Table 13.--Macroelement composition of finfishes, whales, and products.

Common and Scientific Name	Description	Sodium mg	Potassium mg	Calcium mg	Phosphorus mg Per 100 grams	Chlorine mg	Sulfur mg	Magnesium mg
Bream, Sea, Yellow <u>Tautoglabrus</u>	Muscle Raw			44 35-52 2	140			31
Bream, Toached <u>Dentex vulgaris</u>	Muscle Raw		156		410	610		
Bream, White, Sargo <u>Diplodus sargus</u>	Muscle Raw				610	190		
Bream Sparidae	Muscle Raw Cooked Steamed	86 116	313	47 32	132 226	130	230	28
Brill <u>Rhombus laevis</u>	Muscle Raw				301	260		
Brill, Rough Scaled <u>Pseudorhombus oligodon</u>	Muscle Raw			30	204			
Brill Bothidae/Pleuronectidae	Muscle Cooked Steamed	94	264	15	230	125	214	31
Burbot <u>Lota lota</u>	Muscle Raw		268 260-275 2					
Butterfish <u>Peprilus triacanthus</u>	Muscle Raw	81	338					
Butterfish <u>Psenopsis anomala</u>	Muscle Raw			181	302			
Butterfish, Black <u>Stromateus niger</u>	Muscle Raw Salted & Dried	109 106-112 2	318 203-434 2	24 17-32 2 169	232 184-279 2 457			
Butterfish, Silver <u>Stromateus cinereus</u>	Muscle Raw Canned Whole Dried			20 19-20 2 52 2470	248 205-291 2 110 4560			
Butterflyfish, Ca Chix <u>Coradion altivelis</u>	Muscle Raw	101	310	40 24-57 2	134 116-153 2	120		31
Butterflyfish Chaetodontidae	Muscle Raw	108	216					
Caesio, Golden <u>Caesio chrysozonus</u>	Muscle Raw Dried	62 59-66 2	514 508-519 2	54 34-92 3 122	226 174-311 3 236			

Table 13.--Macroelement composition of finfish (continued).

Common and Scientific Name	Description	Sodium mg	Potassium mg	Calcium mg	Phosphorus mg Per 100 grams	Chlorine mg	Sulfur mg	Magnesium mg
Caesio, Golden <u>Caesio cuning</u>	Muscle Raw	52	398 264-530 2	35 34-36 2	365 165-565 2			
Caesio, Moon <u>Caesio lunaris</u>	Muscle Raw	48	601					
Capelin <u>Mallotus villosus</u>	Whole Fishmeal	920	1300	1800	798 296-1300 2		530	130
Cardinalfish <u>Aponogonichthys ellioti</u>	Muscle Raw	123	415					
Carp <u>Chela bacila</u>	Whole Raw			590	340			
Carp <u>Cyprinus carpio</u>	Muscle Raw	60 48-80 3	291 174-397 5	34 17-57 5	193 165-225 3	15b		37 30-43 3
Carp, Bata <u>Labeo bata</u>	Muscle Raw			82 32-182 4	294 20-605 4			
Carp, Crucian <u>Cyprinus carassius</u>	Muscle Raw			105 28-150 4	249 150-421 3			10c
	Canned In Oil			1900	1000			
Carp, Ghania <u>Labeo gonius</u>	Muscle Raw			57 30-95 3	330 282-375 3			
	Dried			2690 2680-2700 2	6840			
Carp, Indian <u>Barbus punitura</u>	Muscle Raw			12	390			
Carp, Indian <u>Barbus stigma</u>	Muscle Raw			75	307			
Carp, Indian <u>Labeo rohita</u>	Muscle Raw	64	231	60 23-91 4	322 228-440 4			
Carp, Indian, Puti <u>Barbus punitus sophore</u>	Muscle Raw			76 43-110 2	174 96-251 2			
Carp, Indian, Puti <u>Barbus sarana</u>	Muscle Raw			37 29-45 2	386 382-390 2			
	Whole							
	Dried			2770	6780			
	Smoked			1420	3680			

Table 13.--Macroelement composition of finfishes, whales, and products.

Common and Scientific Name	Description	Sodium mg	Potassium mg	Calcium mg	Phosphorus mg Per 100 grams	Chlorine mg	Sulfur mg	Magnesium mg
Carp, Katla <u>Catla catla</u>	Muscle Raw	50	151	35 20-62 3	287 168-440 4			
	Dried			1030	2680			
Carp, Mahasole <u>Barbus tor</u>	Muscle Raw			13	28			
Carp, Mrigala <u>Cirrhina mrigala</u>	Muscle Raw			33 22-53 3	306 140-436 5			
Carp, Orange Fin <u>Labeo calbasu</u>	Muscle Raw			47 22-75 4	345 262-420 4			
	Dried			940	2250			
Carp, Reba <u>Cirrhina reba</u>	Muscle Raw			100 43-156 2	453 436-470 2			
Carp, Silver <u>Hypophthalmichthys molitrix</u>	Muscle Raw		435	34	225			
Carp Cyprinidae	Muscle Raw	44	300	37 12-74 8	202 165-269 7	85		36 30-40 3
Catfish, Air Breathing <u>Clarias fuscus</u>	Muscle Raw	55	340	18	204	130		33
Catfish, Air Breathing <u>Clarias magur</u>	Muscle Raw			32 20-43 2	438 375-500 2			
Catfish, Air Breathing, Hito <u>Clarias batrachus</u>	Muscle Raw	60 58-63 2	294 147-440 2	42 34-51 2	142 116-168 2			
Catfish, Air Breathing, Karmouth <u>Clarias lazaxiae</u>	Muscle Raw			95	206			
Catfish, Fresh Water <u>Pseudobagrus aurantiacus</u>	Muscle Raw			55	407			
Catfish, Fresh Water, Bacha <u>Eutropiichthys vacha</u>	Muscle Raw Dried			18 560	102 2240			
Catfish, Fresh Water, Channel <u>Ictalurus punctatus</u>	Muscle Raw			46	221			
Catfish, Fresh Water, Kired <u>Bagarius yarrelli</u>	Muscle Raw			31	268			
Catfish, Fresh Water, Mulley <u>Wallagonia attu</u>	Muscle Raw			34 14-60 3	416 327-494 3		467	
Catfish, Fresh Water, Seenghara <u>Macrones seenghala</u>	Muscle Raw			21	425			

Table 13.--Macroelement composition of finfishes, whales, and products.

Common and Scientific Name	Description	Sodium mg	Potassium mg	Calcium mg	Phosphorus mg Per 100 grams	Chlorine mg	Sulfur mg	Magnesium mg
Catfish, Fresh Water, Shengti <u>Macrones gluilo</u>	Muscle Salted & Dried			208	412			
	Eviscerated Dried			1980	5080			
Catfish, Fresh Water Ictaluridae	Muscle Raw	60	416 330-503 2	225			149	113
Catfish, Sea <u>Arius leiotoctocephalus</u>	Muscle Raw	114	318 224-413 2	26 14-37 2	305 170-440 2			
Catfish, Sea <u>Bagre macracanthus</u>	Muscle Raw	55	390	51	213	110		34
Catfish, Sea, Gafftopsail <u>Bagre marinus</u>	Muscle Raw			32	194			
Catfish, Sea, Manila <u>Arius manillensis</u>	Muscle Raw			92 37-147 2	256 187-324 2			
	Salted & Dried	5409	509	140	346			27
Catfish, Sea, Shingal <u>Arius dussumieri</u>	Muscle Raw			131 24-272 3	220 152-307 3			
Catfish, Sea Ariidae	Muscle Raw	100 98-103 2	456 404-496 3	40 21-61 3	176 150-197 3			
	Cooked Steamed Dried	114	320	16 194	220 600	129	207	26
	Whole Dried			1370	440			
	Eviscerated Salted & Dried	5799				8940		
Catfish, Stinging <u>Saccobranthus fossilis</u>	Muscle Raw	53	223	21	158			
Cavefish <u>Amblyopsis godonmola</u>	Eviscerated Raw			550	350			
Char, Artic <u>Salvelinus alpinus</u>	Muscle Raw		499			36		
Characin <u>Prochilodus laticeps</u>	Muscle Raw			173	266			
Characin Characidae	Muscle Raw			319	248			
	Muscle with Bones Raw			593	390			

Table 13.--Macroelement composition of finfishes, whales, and products.

Common and Scientific Name	Description	Sodium mg	Potassium mg	Calcium mg	Phosphorus mg Per 100 grams	Chlorine mg	Sulfur mg	Magnesium mg
Chub Cyprinidae	Muscle Smoked	2184				3416		
Chub, Sea, Striped Rudder <u>Kyphosus lembus</u>	Muscle Raw		226	36	488			
Chub, Sea Kyphosidae	Muscle Raw				227	240	185	
Cichlid Cichlidae	Muscle Raw			74	344			
	Whole Raw			1391	393		1200	
Cisco, Lake <u>Coregonus artedii</u>	Muscle Raw	46 38-56 3	319 280-358 2	12	152			17
	Whole Fishmeal	250	800	5000	2700			
Cod, Atlantic <u>Gadus morhua</u>	Muscle Raw	67 49-92 4	380 280-365 7	16 6-42 7	265 186-610 7	55	200	24 17-30 4
	Cooked Fried							
	Breaded	93	372	65	298	153	234	25
	Steamed	74	386	27	283	101	278	26
	Salted				157		272	
	Eviscerated Salted & Dried	6637				10232		
Cod, Pacific <u>Gadus macrocephalus</u>	Muscle Raw	73 71-76 3	390 372-405 3	13	193			
	Dried Hard			307	453			
	Slightly Salted			400	573 300	114	30	
Cod, Poor <u>Gadus minutus</u>	Muscle Raw				418	400		
Cod, Rock <u>Roboralka jacksoniensis</u>	Muscle Raw	70	270	20	210			20
Cod Gadidae	Muscle Raw	90 63-180 9	412 372-470 6	15 9-20 11	166 90-220 11	1221/ 97-1502/ 33/	1811/ 171-1912/ 23/	35
	Cooked Fried							
	Battered	102	365	80	202			24
	Battered & Breaded	161	342	50	261		243	27
	Grilled With Butter	110	407	31	274	130	323	36
	Steamed	3520	43	127	204	5220	322	51
	Cured, Salted	2830	264					
	Dried	780		135 30-371 6	612 300-1030 6			

Table 13.--Macroelement composition of finfishes, whales, and products

Common and Scientific Name	Description	Sodium mg	Potassium mg	Calcium mg	Phosphorus mg Per 100 grams	Chlorine mg	Sulfur mg	Magnesium mg
	Salted	2000		32 24-40	228 133-400	11555	285	
	Salted & Dried	5118	1284	2 233 8-656 5	3 448 146-694 5			21
	Offal Fishmeal	1010	1970	5430	3400	1160		140
	Eviscerated Dried	74	1068	2448	2421			169
Coral Cod, Sea Bass <u>Cephalopholis miniatus</u>	Muscle Raw			71	228			
Coral Cod, Sea Bass <u>Plectropomus maculatus</u>	Muscle Raw	50	240	30	200			40
Creville <u>Caranx diedaba</u>	Muscle Raw Salted & Dried	83	367	207	336			
Creville, Jack <u>Caranx carangus</u>	Muscle Raw			27	275			
Croaker <u>Otolithus brachygnathus</u>	Muscle Raw			6	157			
Croaker <u>Sciaena deliciosa</u>	Muscle Raw	80		40 30-57 3	156 32-248 3	123	114	
	Salted & Dried	7711					11633	
Croaker, Atlantic <u>Micropogon undulatus</u>	Muscle Raw	87	234	55	150			
Croaker, Black <u>Pogonias cromis</u>	Muscle Raw	51	226					
Croaker, Nibe <u>Nibea mitsukurii</u>	Muscle Raw			14				31
Croaker, Nibe <u>Nibea nibe</u>	Muscle Raw			16				24
Croaker, Robalo <u>Sciaena starksei</u>	Muscle Raw Salted & Dried	43 10584		24	267	67 16325		
Croaker, Roncador <u>Ophioscion venezuelae</u>	Muscle Raw			292	318			
Croaker, Smooth Scaled <u>Pseudosciaena anea</u>	Muscle Raw Salted & Dried			35 235	125 218			
Croaker, Smooth Scaled <u>Sciaena dussumieri</u>	Muscle Raw	72	419	109	171			
Croaker, White Nibe <u>Argyrosomus argentata</u>	Muscle Raw			40	220			
Croaker, Yellow <u>Pseudosciaena manchuria</u>	Muscle Raw			25				15
Croaker, Yellow <u>Umbrina steindachneri</u>	Muscle Raw			570	250			

Table 13.--Macroelement composition of finfishes, whales, and products.

Common and Scientific Name	Description	Sodium mg	Potassium mg	Calcium mg	Phosphorus	Chlorine mg	Sulfur mg	Magnesium mg
					mg Per 100 grams			
Cusk-Eel <u>Lepophidium brevibarbe</u>	Muscle Raw			66	145			
Cusk-Eel, Bearded Ophidium <u>Ophiodon barbatum</u>	Muscle Raw			19	545	110		53
Cusk-Eel, Congrio Colorado <u>Genypterus chiliensis</u>	Muscle Raw			63	172			
Cusk-Eel, Congrio Negro <u>Genypterus maculatus</u>	Muscle Raw			87	217	298		
Cusk-Eel, Ling <u>Genypterus blacodes</u>	Muscle Raw			64	187			
Cutlassfish <u>Lepidopus caudatus</u>	Muscle Raw				562	100		
Cutlassfish <u>Trichiurus japonicus</u>	Muscle Raw			8	196			
Cutlassfish <u>Trichiurus lepturus</u>	Muscle Raw			16 13-19 2				41 25-57 2
Cutlassfish <u>Trichiurus savaia</u>	Muscle Raw			16	157 113-201 2			
	Salted & Dried			739	700			
Cutlassfish, Ribbonfish <u>Trichiurus haumela</u>	Muscle Raw	86	342	54 32-76 2	176 76-275 2			
	Eviscerated Dried			2210	5080			
Cutlassfish Trichiuridae	Muscle Raw	102 94-110 2	330	27 12-42 2	155 150-160 2			
	Salted		307	151	184			
Dab <u>Limanda limanda</u>	Muscle Raw	84		8				
Dab, Japanese <u>Limanda herzensteini</u>	Muscle Raw	130		36	116			24
Dab, Japanese <u>Limanda yokohama</u>	Muscle Raw			19				36
Dab Pleuronectidae	Muscle Cooked Fried Battered & Breaded	127	284	130	250	245	259	29
Dace Cyprinidae	Muscle Dried			500	1052			
Damselfish <u>Chromis chromis</u>	Muscle Raw				728	140		
Dogfish, Cazon <u>Carcharias aethalurus</u>	Muscle Raw			9	141			

Table 13.--Macroelement composition of finfishes, whales, and products.

Common and Scientific Name	Description	Sodium mg	Potassium mg	Calcium mg	Phosphorus mg Per 100 grams	Chlorine mg	Sulfur mg	Magnesium mg
Dogfish, Smooth <u>Mustelus canis</u>	Muscle Raw			57	256			
Dogfish, White <u>Mustelus dorsalis</u>	Muscle Cold-Smoked			168	266	9400		
Dogfish Squalidae	Muscle Raw	100 100-100 2	174	11 6-16 4	266 176-350 4			20
	Cooked Fried	163	245	13	269	203	210	20
Dolphin, Dorado <u>Aurata aurata</u>	Muscle Raw			10				57
Dolphin, Mai Mai, Dorado <u>Coryphaena hippurus</u>	Muscle Raw	170 98-242 2	370	15	143			
Dolphin Coryphaenidae	Muscle Raw			9	213			
Dory, John <u>Zeus australis</u>	Muscle Raw	60	330	40	130			20
Dory, John <u>Zeus faber</u>	Muscle Raw		151		231	70		
Dory, John <u>Zeus japonicus</u>	Muscle Cooked Unspecified			23	183			
Dory Zeidae	Muscle Cooked Unspecified	139	287	23	251	143	234	29
Drepane, Concertinafish <u>Drepane punctata</u>	Muscle Raw	88	373	57 30-90 3	183 149-235 3			
Drum <u>Sciaena regiae</u>	Muscle Raw		265	38	200			
Drum, Dhoma <u>Sciaena glauca</u>	Muscle Raw			18	444			
Drum, Fresh Water <u>Aplodinotus grunniens</u>	Muscle Raw	73	281					
Drum, Ghol <u>Sciaena miles</u>	Muscle Raw			89	153			
Drum, Popa <u>Sciaenoides pama</u>	Whole Dried			2170	5220			
Drum, Red <u>Sciaenops ocellata</u>	Muscle Raw	55	273					
Drum, Teraglin <u>Cynoscion atelodus</u>	Muscle Raw	60	280	40	120			30
Drum Sciaenidae	Muscle Raw	72 59-97 3	316 295-336 2	52 31-89 5	187 153-280 5			

Table 13.--Macroelement composition of finfishes, whales, and products.

Common and Scientific Name	Description	Sodium mg	Potassium mg	Calcium mg	Phosphorus mg Per 100 grams	Chlorine mg	Sulfur mg	Magnesium mg
	Canned In Oil Salted & Dried	5200	290 758	470 274	310 244			
Eel, Conger <u>Conger conger</u>	Muscle Raw		282	82 22-150 4	294 180-390 4	100		
Eel, Conger Congridae	Muscle Raw	70 50-89 2	234 200-267 2	32 19-69 4	214 200-223 3	57	187	35 19-67 3
	Cooked Fried Battered & Breaded & Steamed	108 73	353 132	24 13	247 402	156 173	222 272	29 8
Eel, Fresh Water <u>Anguilla vulgaris</u>	Muscle Raw		210		364	60		
Eel, Fresh Water, American <u>Anguilla rostrata</u>	Muscle Raw			56	247			
Eel, Fresh Water, European <u>Anguilla anguilla</u>	Muscle Raw			100	170		140	19
Eel, Fresh Water, Japanese <u>Anguilla japonica</u>	Muscle Raw Cooked Broiled & Seasoned		712	118	196			
		620		140	280			
Eel, Fresh Water Anguillidae	Muscle Raw	31	241	40 18-90 5	250 177-403 5	47 34-60 2	153 130-194 3	18
	Whole Raw	67	230	515	440	55	141	31
Eel, Moray, Creek <u>Muraena helena</u>	Muscle Raw	25	165	42 19-64 2	270 138-532 3	57 24-90 2	36 2-70 2	16 15-17 2
Eel, Moray Muraenidae	Muscle Raw	139	375	63	83			
Eel, Pike Conger <u>Muraenesox telabonoides</u>	Muscle Raw			27	280			
Eel, Pike Conger, Silver <u>Muraenesox cinereus</u>	Muscle Raw	88	490	112 26-220 5	225 193-270 4			28
Eel, Pike Conger Muraenesocidae	Muscle Raw Cooked Stewed	77 73	215 200	13 14	192 200	69 64	162 199	14 15
Eel, Snake, Murrel <u>Ophicephalus leucopunctatus</u>	Muscle Raw			20	113		570	

Table 13.--Macroelement composition of finfish, whales, and products

Common and Scientific Name	Description	Sodium mg	Potassium mg	Calcium mg	Phosphorus mg Per 100 grams	Chlorine mg	Sulfur mg	Magnesium mg
Eel, Snake, Murrel <u>Ophicephalus marulius</u>	Muscle Raw			19 15-23 2	234 158-311 2			
Eel, Snake, Murrel <u>Ophicephalus punctatus</u>	Muscle Raw			41 15-80 4	344 118-530 5			
Eel, Snake, Murrel <u>Ophicephalus striatus</u>	Muscle Raw	62 38-86 2	396 314-474 3	43 14-96 6	200 95-360 7	95		34
	Eviscerated Salted & Dried	4103				6326		
Eel, Spiny <u>Mastacembelus armatus</u>	Muscle Raw			33 21-55 3	473 121-975 3			
Eel, Spiny <u>Mastacembelus favus</u>	Muscle Raw	50	270	26	174	223		27
Eel, Swamp, Field <u>Fluta alba</u>	Muscle Raw	116	172	30	93			
Eel, Swamp, Palos <u>Synbranchus bengalensis</u>	Muscle Raw			50	158			
Emperor <u>Lethrinus karwa</u>	Muscle Fishmeal			97	144			
Emperor <u>Lethrinus opercularis</u>	Muscle Raw	61	488	48	203			
Featherback <u>Notopterus notopterus</u>	Muscle Raw			63 54-72 2	390 330-450 3			
Featherback, Chitala <u>Notopterus chitala</u>	Muscle Raw	40 34-45 2	190 119-260 2	51 40-67 4	273 161-405 5	106		32
Flathead, Deep Sea <u>Platycephalus macrodon</u>	Muscle Raw	40	190	30	260			10
Flathead, Indian <u>Platycephalus indicus</u>	Muscle Raw	91	392	39 11-79 4	247 174-390 3			27
Flounder <u>Cleisthenes pinetorum herzensteini</u>	Muscle Raw			24				29
Flounder <u>Cynoglossus senegalensis</u>	Muscle Raw			18	104			
Flounder <u>Lepidorhombus boschii</u>	Muscle Raw		299	22	250			
Flounder, Gulf <u>Paralichthys albigutta</u>	Muscle Raw			25	168			

Table 13.--Macroelement composition of finfishes, whales, and products.

Common and Scientific Name	Description	Sodium mg	Potassium mg	Calcium mg	Phosphorus mg Per 100 grams	Chlorine mg	Sulfur mg	Magnesium mg
Flounder, Scaldfish <u>Arnoglossus roscii</u>	Muscle Raw				353	240		
Flounder, Southern <u>Paralichthys lethostigma</u>	Muscle Raw	54	220	25	193			
Flounder, Spotted <u>Citharus linguatula</u>	Muscle Raw				401	230		
Flounder, Starry <u>Platichthys stellatus</u>	Muscle Raw	92 85-99 2	318 285-350 2		384			
Flounder, Starry, Hirame <u>Paralichthys olivaceus</u>	Muscle Raw	160		36 8-63 2	230 185-275 2			25
Flounder, Stone <u>Kareius bicoloratus</u>	Muscle Raw			17				31
Flounder, Yellowtail <u>Limanda ferruginea</u>	Muscle Raw	53 38-79 4	262 157-366 2	27	203			
Flounder Bothidae/Pleuronectidae	Muscle Raw	121 12-145 8	332 195-515 6	32 8-110 13	234 110-264 9	176	192 168-215 2	36 24-49 5
	Cooked							
	Fried	130	282	75	218	200	203	23
	Steamed	115	318	55	296	148	231	25
Fluke <u>Pleuronectes flesus</u>	Muscle Raw			37	240			24
Flyingfish <u>Cypselurus opisthopus</u>	Muscle Raw			15 11-19 2	247 218-276 2			
	Salted			81	240			
Flyingfish, Small Scaled <u>Cypselurus oligolepis</u>	Muscle Raw			45	213			
Flyingfish, Tropical Two-winged <u>Exocoetus volitans</u>	Muscle Raw				614	90		
Garfish <u>Belone acus</u>	Muscle Raw				362	140		
Garfish <u>Tylosurus giganteus</u>	Muscle Raw	79	563	98	260			
Garfish Belonidae	Muscle Raw			33				79

Table 13.--Macroelement composition of finfishes, whales, and products.

Common and Scientific Name	Description	Sodium mg	Potassium mg	Calcium mg	Phosphorus mg Per 100 grams	Chlorine mg	Sulfur mg	Magnesium mg
Giant Perch <u>Lates calcarifer</u>	Muscle Raw	68 66-70 3	313 173-477 3	43 30-54 3	176 89-314 4			20
Goatfish, Ca'Phen <u>Parapeneus indicus</u>	Muscle Raw	40	320	97	174	150		30
Goatfish, Red Mullet <u>Mullus barbatus</u>	Muscle Raw		311	70 23-118 2	256 158-331 3	140		
Goatfish, Red Mullet <u>Mullus piccolii</u>	Muscle Raw				1094	190		
Goatfish, Red Mullet <u>Mullus surmulletus</u>	Muscle Raw				340	140		
Goatfish, Yellow <u>Upenoides sulphureus</u>	Muscle Raw			91	170			
Goatfish Mullidae	Muscle Raw	82 66-98 2	375	76	180			
Goby, Banner <u>Microgobius microlepis</u>	Muscle Raw	101	339		301			
Goby, Chiozzo <u>Gobius jozo</u>	Muscle Raw				554	250		
Goby, Flathead <u>Glossogobius giurus</u>	Muscle Raw	64 50-79 2	325 250-454 3	69 50-84 3	293 151-537 4	106		28
Goby, Round <u>Neogobius melanostomus</u>	Muscle Raw		262	44	222	23		
Goby, Sea Trout, Merluzza <u>Macrodon ancylodon</u>	Muscle Raw			31	285 252-318 2			
Goby Gobiidae	Muscle Raw	113 76-150 2	360	30 15-38 3	339 220-536 3			49
Goldfish, Funa <u>Carassius auratus</u>	Muscle Raw	63	374 335-436 3	76 42-109 2	203			69
Goosefish, Monkfish <u>Lophius budegassa</u>	Muscle Raw				597	370		
Goosefish, Monkfish <u>Lophius litulus</u>	Muscle Raw			23	142			
Goosefish, Monkfish <u>Lophius piscatorius</u>	Muscle Raw		297	19	225			
Goosefish, Monkfish <u>Lophius setigerus</u>	Muscle Raw			7	180			

Table 13.--Macroelement composition of finfishes, whales, and products.

Common and Scientific Name	Description	Sodium mg	Potassium mg	Calcium mg	Phosphorus mg Per 100 grams	Chlorine mg	Sulfur mg	Magnesium mg
Goosefish, Monkfish <i>Lophiidae</i>	Muscle Raw	180		7				
	Cooked							
	Fried							
	Battered & Breaded	164	400	11	206	197	206	32
	Steamed	135	356	10	215	136	256	30
Greenling, Atka, Mackerel <i>Pleurogrammus azonus</i>	Muscle Raw			12	180			
Grenadier <i>Macrouridae</i>	Muscle Raw			20				83
Grouper <i>Epinephelus ergastularius</i>	Muscle Raw	60	280	20	150			10
Grouper, Black <i>Mycteroperca bonaci</i>	Muscle Raw			11	214			
Grouper, Merou <i>Epinephelus aeneus</i>	Muscle Raw		264	40	510			
Grouper, Merou <i>Epinephelus goreensis</i>	Muscle Raw			30	580			
Grouper, Merou Rouge <i>Epinephelus taeniops</i>	Muscle Raw			80	540			
Grouper, Red <i>Epinephelus morio</i>	Muscle Raw	80	233	40	184 167-200 2			
Grouper, Spotted <i>Epinephelus corallicola</i>	Muscle Raw	87	413	55	173			
Grouper, Yellowbelly <i>Epinephelus gigas</i>	Muscle Raw		304	20	301 227-375 2	90		
Grun <i>Anisotremus scapularis</i>	Muscle Raw			47 22-72 2	172 139-204 2	81		
	Cooked Roasted Dried			22 270	170 525	306		
Grun <i>Hapalogenys mucronatus</i>	Muscle Raw			25	235			
Grun <i>Parapristipoma trilineatum</i>	Muscle Raw			78 45-112 2	262 180-343 2			
Grun <i>Pristipoma jubelini</i>	Muscle Raw			36	243			
Grun, Besurgo, Bangkoknok <i>Pomadasys argyreus</i>	Muscle Raw	80	358					
Grun, Bluestriped <i>Haemulon sciurus</i>	Muscle Raw			65	285			

Table 13.--Macroelement composition of finfishes, whales, and products.

Common and Scientific Name	Description	Sodium mg	Potassium mg	Calcium mg	Phosphorus mg Per 100 grams	Chlorine mg	Sulfur mg	Magnesium mg
Grunt, Dorade <u>Parapristipoma mediterraneum</u>	Muscle Raw			24	146			
Grunt, Meagre <u>Pomadasys operculare</u>	Muscle Raw Dried			9 240	129 500			
Grunt, Mojarita <u>Anisotremus interruptus</u>	Muscle Raw			15	261			
Grunt, Trumpeter <u>Pelatis sexlineatus</u>	Muscle Raw	70	200	20	110			10
Grunt, White <u>Haemulon plumieri</u>	Muscle Raw			10	167			
Grunt Pomadasyidae	Muscle Raw	72	260	36	222			
Guitarfish <u>Rhinobatus polyophthalmus</u>	Muscle			12				24
Guitarfish, Guitarra <u>Rhinobatus planiceps</u>	Muscle Dried			368	597	1393	793	
Gurnard <u>Cheilodactylus macropterus</u>	Muscle Raw	80	436 320-551 2	40	130			43 20-66 2
Gurnard, Flying Dactylopteridae	Muscle Raw		315	104	221			
Gurnard, Red <u>Cheilodactylus kumu</u>	Muscle Raw		304	45 19-95 3	222 186-257 2			22
Haddock <u>Melanogrammus aeglefinus</u>	Muscle Raw Cooked Fried Steamed Frozen In Brine Smoked	98 54-202 10 177 76 31-121 2 198 1210 1201-1220 2	357 299-434 9 348 323 293	27 7-62 8 77 55 58	203 164-318 8 247 234 248	130 17-199 5 181 78 653 1890 1879-1900 2	213 164-229 5 285 304 237 221-253 2	24 23-24 2 31 28 25
Hagfish, Atlantic <u>Myxine glutinosa</u>	Muscle Raw	136	114	4	160	141	11	26
Hake <u>Merluccius maculatus</u>	Muscle Raw		306	46				29
Hake <u>Urophycis brasiliensis</u>	Muscle Raw			46				79
Hake, Chilian <u>Merluccius gayi</u>	Muscle Raw Dried	787		67 602 243-960 2	222 1427 1424-1430 2	1207	997	
Hake, European <u>Merluccius merluccius</u>	Muscle Raw		264 223-295 3	44 22-64 4	213 126-305 5	70	194	24 20-28 2

Table 13.--Macroelement composition of finfishes, whales, and products.

Common and Scientific Name	Description	Sodium mg	Potassium mg	Calcium mg	Phosphorus mg Per 100 grams	Chlorine mg	Sulfur mg	Magnesium mg
Hake, Pacific <u>Merluccius productus</u>	Muscle Raw			46	182			
	Whole Raw	126 111-140 2	334 315-352 2					
	Fishmeal	630	1670	3430	2200		1160	130
Hake, Silver, Whiting <u>Merluccius bilinearis</u>	Muscle Raw	83 74-95 3	308 288-347 4	61 50-72 2	201 180-222 2			
	Whole Fishmeal		1460	230	890			
Hake, Squirrel <u>Urophycis chuss</u>	Muscle Raw	92	302					
Hake Gadidae	Muscle Raw	74	396	93 12-160 3	556 162-950 2			56
	Cooked							
	Fried	153	297	26	259	134	197	29
	Steamed	118	310	16	218	95	193	27
	Stockfish	396	31	22	163	670	372	35
Halfbeak <u>Hemiramphus sajori</u>	Muscle Raw			124	260			
Halfbeak <u>Reporhamphus australias</u>	Muscle Raw	70	250	30	160			20
Halfbeak, No-spotted <u>Hemiramphus georgii</u>	Muscle Raw	112	456	175 121-229 2	184 140-227 2			
Halfbeak Exocoetidae	Muscle Raw	73 65-81 3	516	44 43-44 2	203 200-206 2			
Halibut, Arctic <u>Hippoglossus vulgaris</u>	Muscle Raw		380	8	185		185	
Halibut, Atlantic <u>Hippoglossus hippoglossus</u>	Muscle Raw	71 49-112 3	8					
Halibut, Pacific <u>Hippoglossus stenolepis</u>	Muscle Raw	59 47-68 5	434 379-501 4	22 8-47 3	222 221-222 2			25
Halibut Pleuronectidae	Muscle Raw	156 53-460 4	518 500-540 4	19 5-30 5	206 167-253 5	88	198 197-199 2	60
	Cooked Steamed	111	340	13	255	80	241 227-255 2	23
	Smoked				205		176	
	Smoked & Dried	5109				8660 7891		

Table 13.--Macroelement composition of finfishes, whales, and products.

Common and Scientific Name	Description	Sodium mg	Potassium mg	Calcium mg	Phosphorus mg Per 100 grams	Chlorine mg	Sulfur mg	Magnesium mg
Herring <u>Clupea harengus</u>	Muscle Raw			120	197			
Herring, Atlantic <u>Clupea harengus</u>	Muscle Raw		154	20	280		200	36
	Canned In Oil							
	Drained			404 363-460 3	379 152-496 3	1050		
	Kipperd			190	189			
	Unspecified			417 354-480 2	362 217-434 2		113	
	In Tomato Sauce			302	457			
	Unspecified			213	300			
	Smoked			40	424		150	
	Whole Fishmeal	630	1120	1990	1064 637-1490 2			140
Herring, Atlantic Thread <u>Opisthonema oglinum</u>	Muscle Raw			166	324			
Herring, Bachiva, Bacha <u>Clupisoma garua</u>	Muscle Raw			45 28-62 2	196 168-223 2			
Herring, Deep Bodied <u>Sardinella perforata</u>	Muscle Raw	131	501	157	290			
Herring, Fimbriated, Tunsoy <u>Sardinella fimbriata</u>	Muscle Raw	107 99-115 2	404 325-484 2	126 53-207 6	441 209-1136 6			
	Salted & Dried	5175	1060	200	366			
	Whole Dried			1640	540			
	Dried & Smoked			3423	520			
Herring, Machete <u>Ethmidium chilcae</u>	Muscle Raw			118 49-186 2	160 103-217 2	56		
Herring, Pacific <u>Clupea pallasii</u>	Muscle Raw	117 74-160 2	420	83 64-102 2	228 174-281 3			32
	Dried			95 92-98 2	830 720-940 2			
	Salted			84	223 140-306 2			
	Smoked			78	580			
Herring, Round <u>Etrumeus micropus</u>	Muscle Raw			28	610			
Herring, Wolf <u>Chirocentrus dorab</u>	Muscle Raw	128	235	60 21-97 2	714 278-1150 2			

Table 13.--Macroelement composition of finfishes, whales, and products.

Common and Scientific Name	Description	Sodium mg	Potassium mg	Calcium mg	Phosphorus mg Per 100 grams	Chlorine mg	Sulfur mg	Magnesium mg
Herring <i>Clupeidae</i>	Muscle							
	Raw	105 52-160 7	322 268-446 5	58 15-112 11	262 160-364 15	115 108-122 2	206 191-221 4	26 10-32 4
	Canned							
	In Bouillon			260	350			
	In Oil	510	560	230	330			
	In Tomato Sauce		356	79	322	625		
	Unspecified			8-150 2				
	Cooked							
	Baked							
	In Vinegar	62	233	58	326	119	205	22
	Unspecified	990	520	65	426	1520	280	48
	Curried	3723	251				266	35
	Fried	101	415	39	339	125	261-270 2	
	Dried			130 97-163 2	763 710-816 2			
	Kipperd			140	380		410 225-596 2	
	Salted			62	350			
	Smoked	5610 1703-9516 2		78	474 367-580 2	8240 2626-14884 3	360 222-497 2	
	Whole							
	Cooked							
	Fried	225	112	859	856	325	269	50
	Kipperd	2276 990-4598 3				7102		
	Salted	4621 3902-5340 2				7140 6026-8255 2		
	Salted & Dried			1056	642			
	Smoked			1490	520			
	Fishmeal	597 420-818 4	1452 1200-1910 4	2662 1950-3900 7	1928 1500-2203 7		1100	150 110-192 4
	Eviscerated							
	Raw	189				291		
Japanese fish <i>Labracoglossus argentiventris</i>	Muscle			66	120			
	Raw							
Jewfish <i>Pseudosciaena colber</i>	Muscle			307	292			
	Raw							
Jewfish <i>Sciaena antarctica</i>	Muscle	70	260	40	170			30
	Raw							
Jewfish <i>Sciaena sina</i>	Muscle			21	98			
	Raw							
Jewfish, California <i>Stereolepis gigas</i>	Muscle			10	192			
	Raw							
Kingfish <i>Caranx equulus</i>	Muscle			7				17
	Raw							
Kingfish, Gulf <i>Menticirrhus littoralis</i>	Muscle	83	250					
	Raw							
Lamprey <i>Entosphenus japonicus</i>	Muscle			10	180			
	Raw			160	240			
	Dried							

Table 13.--Macroelement composition of finfishes, whales, and products.

Common and Scientific Name	Description	Sodium mg	Potassium mg	Calcium mg	Phosphorus mg Per 100 grams	Chlorine mg	Sulfur mg	Magnesium mg
Lamprey <i>Petromyzontidae</i>	Muscle Raw Dried			16 46	120 339			
Lance, Sand <i>Ammodytes americanus</i>	Whole Fishmeal	920	1300	1800	1300		530	130
Leatherjacket <i>Lichia glauca</i>	Muscle Raw Eviscerated Raw			30	680 558	 110		
Leatherjacket, Yellow <i>Scomber lyson</i>	Muscle Raw		150 183-266 2	59 5-95 3	600 196-1005 2			9
Levovangan <i>Monotaxes grandoculis</i>	Muscle Raw	127 93-161 2	263 58-468 2	50	178			
Ling <i>Molva molva</i>	Muscle Raw	83		14 7-20 2	200			
Ling <i>Molvidae</i>	Muscle Cooked Fried Battered & Breaded Steamed	145 120	312 370	40 18	228 221	157 99	203 266	32 37
Lingcod <i>Ophiodon elongatus</i>	Muscle Raw	59 54-62 3	413 352-448 3	35 15-55 3	190 165-230 3			18
Lizardfish <i>Saurida argyrophanes</i>	Muscle Raw			11	270			
Lizardfish <i>Saurida tumbil</i>	Muscle Raw	70	513	46 42-49 2	208 201-214 2			
Lizardfish <i>Saurus lacerta</i>	Muscle Raw				445	110		
Lizardfish, Spotted Tail <i>Saurida undosquamis</i>	Muscle Raw			13				29
Lizardfish <i>Synodontidae</i>	Whole Dried			1370	440			
Loach, Weatherfish <i>Misgurnus anguillicaudatus</i>	Muscle Raw		496	40 28-53 2	419 402-436 2			
Longaray <i>Ambassidae</i>	Muscle Raw			67	150			
Lumpfish <i>Cyclopteridae</i>	Whole Raw	275				425		

Table 13.--Macroelement composition of finfishes, whales, and products.

Common and Scientific Name	Description	Sodium mg	Potassium mg	Calcium mg	Phosphorus mg Per 100 grams	Chlorine mg	Sulfur mg	Magnesium mg
Maasbanker, Mackerel, Jack <u>Trachurus trachurus</u>	Muscle Raw	64	360	65	218 192-244 2	120		
Mackerel <u>Scomber australias</u>	Muscle Raw	100	420	20	270			
Mackerel <u>Scomber microlepidotus</u>	Muscle Raw			48	778			
Mackerel, Atlantic <u>Scomber scombrus</u>	Muscle Raw	48	245 236-254 2	8 5-11 2	307 217-453 3	110	190	28
	Canned			186	260			
Mackerel, Frigate <u>Auxis tapenosoma</u>	Muscle Raw			35	210			
Mackerel, Frigate <u>Auxis thazard</u>	Muscle Raw	252	464	24 11-39 3	250 193-341 3			
Mackerel, Horse <u>Caranx melampygus</u>	Eviscerated Raw			357	253			
Mackerel, Horse <u>Caranx ronchus</u>	Muscle Raw			72 64-80 2	359 153-565 2			
Mackerel, Horse Carangidae	Muscle Raw		262	20 11-30 2	252			41 13-69 2
	Fishmeal	570	890	6200	3340			180
Mackerel, Jack <u>Caranx delicatissimus</u>	Muscle Raw			16				37
Mackerel, Jack <u>Trachurus japonicus</u>	Muscle Raw	94		15 12-19 3	254 222-287 2			30 28-33 2
	Canned	800		45	300			
	Salted & Dried	1400		600	1300			
Mackerel, Jack Carangidae	Muscle Raw	90 89-90 2	415	34 12-49 5	200 179-226 4			28
	Canned	800		45	300			
	Salted & Dried	1200		70	450			
Mackerel, Japanese, Spanish <u>Scomberomorus niphonius</u>	Muscle Raw			8	355			
Mackerel, King <u>Scomberomorus cavalla</u>	Muscle Raw			9	279			
Mackerel, King, Seer <u>Scomberomorus commersonii</u>	Muscle Raw	59 49-70 3	520 420-669 3	32 7-92 5	245 162-345 5	99		37
	Dried	2174	597	77	225			
	Salted & Dried			86	329			

Table 13.--Macroelement composition of finfishes, whales, and products.

Common and Scientific Name	Description	Sodium mg	Potassium mg	Calcium mg	Phosphorus mg Per 100 grams	Chlorine mg	Sulfur mg	Magnesium mg
Mackerel, Long-jawed <u>Rastrelliger canagurta</u>	Muscle Raw	44 40-48	366 176-511	46 39-58	324 155-622			
	Dried	2 150	3 1600	3 217	3 602			
	Salted & Dried	4289 3535-5043	1150 881-1418	217 183-251	469 351-587			
		2	2	2	2			
Mackerel, Pacific Chub <u>Scomber japonicus/colias</u>	Muscle Raw	99	372 274-469	16 6-31	270 175-384			32 29-35
	Canned		2	4 155	3 274			2
	Dried			50-260	260-288			
	Salted			2 17 25	2 650 240			
Mackerel, Short-bodied, Hasa Hasa <u>Rastrelliger brachysomus</u>	Muscle Raw	172	461	74	204			
	Smoked	1599	537	52	239			
Mackerel, Spanish <u>Scomberomorus maculatus</u>	Muscle Raw	44 10-89	234 136-292	34 11-57	208 168-248			
		4	4	2	2			
Mackerel, Spotted Spanish <u>Scomberomorus guttatus</u>	Muscle Raw			86	349			
Mackerel, Surmai <u>Scomberomorus kuhlui</u>	Muscle Raw			93	162			
	Salted & Dried			148	172			
Mackerel, West African, Spanish <u>Scomberomorus tritor</u>	Muscle Raw			27 10-44	426 262-590			
	Dried			2 228	2 775			
Mackerel Scombridae	Muscle Raw	94 48-137	486	22 5-94	216 66-298	190 170-211	193 162-233	29 23-35
	Canned	4		10	11	2	3	2
	Boiled	860		50	260			
	In Bouillon			280	360			
	In Oil	517		145	235	798		
	In Tomato Sauce			200	280			
	Marinated			270	340			
	Unspecified		385 329-441	162 101-225	324 273-374	590		
			2	4	2			
	Cooked							
	Fried	153	418	28 64	280 560	114	210	35
	Dried			17-110	470-650			
	Salted	1600		2 25	2 212		245	
				25-25	153-242			
	Smoked	3129		2	3	4824		
Marlin <u>Makaira manazza</u>	Muscle Raw			5				14

Table 13.--Macroelement composition of finfishes, whales, and products.

Common and Scientific Name	Description	Sodium mg	Potassium mg	Calcium mg	Phosphorus mg Per 100 grams	Chlorine mg	Sulfur mg	Magnesium mg
Marlin, Blue <u>Makaira nigricans</u>	Muscle Raw			22	229			
Megrim <u>Lepidorhombus whiffiagonis</u>	Muscle Raw	121	269	62	187	122	204	29
	Cooked							
	Fried							
	Battered & Breaded	177	251	63	219	183	235	31
	Steamed	96	214	76	218	119	246	28
Menhaden, Atlantic <u>Brevoortia tyrannus</u>	Whole Fishmeal	310	600	5170	2950			140
Menhaden Clupeidae	Muscle Raw	1140	1570	60	560			110
	Whole Fishmeal	435 340-530 2	1035 720-1350 2	4566 1220-5694 6	2504 853-3526 6			150 140-160 2
Milkfish <u>Chanos chanos</u>	Muscle Raw	72 64-80 2	292 94-401 3	36 16-51 3	193 153-264 3			
	Smoked	1136	837	78 76-80 2	188 181-195 2			
Minnow, Common <u>Zacco platypus</u>	Muscle Raw			140	180			
Mojarra <u>Diapterus evermanni</u>	Muscle Raw			112	312			
Mojarra, Silver <u>Pentapodon longimanus</u>	Muscle Raw	116	213					
Mojarra, Spotted <u>Gerres filamentosus</u>	Muscle Raw	107	404	66	191			
Moonfish, Pacific <u>Vomer declivifrons</u>	Muscle Raw	73	437	22	227			
Mullet <u>Mugil caerulea</u>	Muscle Raw	61	490					
Mullet <u>Mugil kalaartii</u>	Muscle Raw	66		25	296			
Mullet <u>Mugil liza</u>	Muscle Raw			33	157			
Mullet, Black Fin <u>Mugil melanocephalus</u>	Muscle Raw Dried			95 313	185 195			
Mullet, Ca'Doi <u>Mugil affinis</u>	Muscle Raw	60	290	14	176			27
Mullet, Green-backed <u>Mugil dussumieri</u>	Muscle Salted & Dried			313	196			
Mullet, Grey <u>Mugil auratus</u>	Muscle Raw		274	19	253			26

Table 13.--Macroelement composition of finfishes, whales, and products.

Common and Scientific Name	Description	Sodium mg	Potassium mg	Calcium mg	Phosphorus mg Per 100 grams	Chlorine mg	Sulfur mg	Magnesium mg
Mullet, Grey, Boi <u>Mugil speigleri</u>	Muscle Raw			23	315			
Mullet, Indian <u>Mugil corsula</u>	Muscle Raw			18	360			
	Whole Dried			1830	5310			
Mullet, Kechki <u>Mugil cascasi</u>	Muscle Raw			59	318			
	Whole Dried			1880	4380			
Mullet, Long-finned <u>Mugil vaigiensis</u>	Muscle Raw		259	37 15-59 2	340 195-484 2			
Mullet, Striped <u>Mugil cephalus</u>	Muscle Raw	81 58-100 4	308 292-320 4	26 11-93 10	228 153-436 10	120		29 25-32 3
Mullet Mugilidae	Muscle Raw	70 69-70 2	485	51 16-99 5	231 173-338 5			33
	Cooked Fried In Oil Steamed Salted & Dried Fishmeal	1100 106	510 320	840 22 289 69	520 269 601 117	89	255	32
	Whole Raw Smoked	624		195 1482		305 1647 976-2318 2		
Nemipterid, Long-tailed <u>Nemipterus japonicus</u>	Muscle Raw	106	326	135	172			
Nemipterid, Ribbon-finned <u>Nemipterus taenipterus</u>	Muscle Raw Salted & Dried	88 5857	500 654	39 245	210 254			
Nemipterid, Roncador <u>Nemipterus virgatus</u>	Muscle Raw			116 81-150 2	197			28
Pandora, Sea Bream <u>Pagellus erythrinus</u>	Muscle Raw		308 302-315 2	20				
Parrotfish <u>Oplegnathus fasciata</u>	Muscle Raw			32	352			
Parrotfish <u>Scarus mechipunctatus</u>	Muscle Raw			36	144			
Parrotfish, Loro <u>Sparisoma squalidum</u>	Muscle Raw			90	213			

Table 13.--Macroelement composition of finfishes, whales, and products.

Common and Scientific Name	Description	Sodium mg	Potassium mg	Calcium mg	Phosphorus mg Per 100 grams	Chlorine mg	Sulfur mg	Magnesium mg
Parrotfish <i>Scaridae</i>	Muscle Raw	103	395					
Perch, Blue, Walleye <i>Stizostedion vitreum glaucus</i>	Muscle Raw	52	324		201			
Perch, Climbing <i>Anabes testudenicus</i>	Muscle Raw	45 35-64 3	314 195-438 3	80 28-131 2	164 159-169 2	92		32
Perch, Climbing, Gourami <i>Trichogaster fasciata</i>	Whole Raw			460	360			
Perch, Climbing, Gourami <i>Trichogaster pectoralis</i>	Muscle Raw			70	177			
Perch, Climbing, Gourami <i>Trichogaster trichopterus</i>	Muscle Raw	35	350	13	183	106		35
Perch, Climbing Anabantidae	Muscle Raw			98	160			
Perch, Golden, Callop <i>Plectroplites ambiguus</i>	Muscle Raw	80	210	30	130			20
Perch, Ocean, Pacific <i>Sebastes alutus</i>	Muscle Raw	70 62-79 2	358 324-393 2					
Perch, Sand <i>Psammoperca walgiensis</i>	Muscle Raw			36	185			
Perch, White <i>Morone americanus</i>	Muscle Raw				192		261	
Perch, Yellow <i>Perca flavescens</i>	Muscle Raw	67	242 226-261 3				370	
Picarel <i>Maena zebra</i>	Muscle Raw				606	120		
Picarel <i>Smaris vulgaris</i>	Muscle Raw				706	335		
Pigfish, Grunt <i>Orthopristis chrysoptera</i>	Muscle Raw		364	44				36
Pike, Muskellunge <i>Esox masquinongy</i>	Muscle Raw				227		148	
Pike, Northern <i>Esox lucius</i>	Muscle Raw		340	259				
Pike Esocidae	Muscle Raw	40 29-52 2	363 310-416 2	40	213	32	218	31
Pilchard, European <i>Clupea pilchardus</i>	Muscle Raw		321	55 24-86 2	441 220-742 5	930		

Table 13.--Macroelement composition of finfishes, whales, and products.

Common and Scientific Name	Description	Sodium mg	Potassium mg	Calcium mg	Phosphorus mg Per 100 grams	Chlorine mg	Sulfur mg	Magnesium mg
	Canned In Oil Drained Unspecified			54 497 409-593 3	321 608 545-683 3		290	41
	Whole Canned			580	624			
Pilchard, Japanese <u>Sardinops melanosticta</u>	Muscle Raw	100	465	74 35-106 3	295 229-417 3			58 41-74 2
	Canned In Oil In Tomato Sauce	770 1100		450 354 330-388 2	430 406 360-452 2			
	Seasoned Unspecified Salted Salted & Dried	800 800 2400		270 270 85 393	360 360 350 2458			
	Muscle with Bones Dried	2100		1276	1657			
	Eviscerated Raw			159	514			
Pilchard, Pacific <u>Sardinops (Sardina) caerulea</u>	Muscle Canned In Tomato Sauce Unspecified			381 137	168 229			
Pilchard Clupeidae	Muscle Raw Canned	585 400-760 3	295 260-320 3	42 303 231-381 3	212 246 168-296 3	905	245	24 42
	Whole Fishmeal	610	520	4690	2900	630		190
Pintadilla <u>Cheilodactylus variegatus</u>	Muscle Raw			44 29-59 2	148 73-222 2	24		
Plaice <u>Pleuronectes arsius</u>	Muscle Raw	60	260	30	160			10
Plaice, American <u>Hippoglossoides platessoides</u>	Muscle Raw	90	329					
Plaice Pleuronectidae	Muscle Raw	96	353	18 17-20 2	219 218-220 2	83	208 203-214 2	24 22-25 2
	Cooked Fried Battered & Breaded Steamed	124 120	219 278	45 38	251 246	174 112	249 249	24 24
Pollack, Saithe, Coalfish <u>Pollachius virens</u>	Muscle Raw	59 34-86 2	349 348-350 2	54 20-87 2	224 220-228 2	91		

Table 13.--Macroelement composition of finfishes, whales, and products.

Common and Scientific Name	Description	Sodium mg	Potassium mg	Calcium mg	Phosphorus mg Per 100 grams	Chlorine mg	Sulfur mg	Magnesium mg
	Cooked Steamed	97	348	19	250		266	31
Pollack, Walleye <u>Theragra chalcogramma</u>	Muscle Raw		428	9	376			57
	Dried			746	985			
Pollack Gadidae	Muscle Raw			63 15-154 3	224 220-230 3			33
	Cooked Fried							
	Battered & Breaded	162	333	128	241	275	198	45
	Steamed	95	438	13	202	114	238	33
	Dried	780		30	540			
Pomfret <u>Pampus rafi</u>	Muscle Raw				305	111		
Pomfret, Silver <u>Pampus argenteus</u>	Muscle Raw		517	23	152 140-163 2			
Pompano <u>Trachinotus palometus</u>	Muscle Raw			18	143			
Pompano, Indian <u>Alectis indicus</u>	Muscle Raw		274	26	658			
Pompano, Pacific <u>Neptomenus crassus</u>	Muscle Raw	120		38 9-66 2	327 211-524 3	300 185-416 2	68	
Pompano, Permit <u>Trachinotus falcatus</u>	Muscle Raw			95	193			
Pompano, Talakitok <u>Caranx malabaricus</u>	Muscle Raw		260	27	501			
Pompano Carangidae	Muscle Raw			68	130			
Porgy, Aligote <u>Pagellus acarne</u>	Muscle Raw				628	130		
Porgy, Bogue <u>Sarpa (Box) boops</u>	Muscle Raw				519	365		
Porgy, Pargo <u>Pagrus ehrenbergii</u>	Muscle Raw			85	390			
Porgy, Sheepshead <u>Archosargus probatocephalus</u>	Muscle Raw	101	234					
Porgy Sparidae	Muscle Raw			35 15-49 4	185 62-288 6	253	201	
	Dried			160	678 575-780 2			
Puffer, Swellfish <u>Sphoeroides porphyreus</u>	Muscle Raw			20	300			
Puffer, Swellfish Tetraodontidae	Muscle Raw		347	16 13-18 2	139 138-140 2			

Table 13.--Macroelement composition of finfishes, whales, and products.

Common and Scientific Name	Description	Sodium mg	Potassium mg	Calcium mg	Phosphorus mg Per 100 grams	Chlorine mg	Sulfur mg	Magnesium mg
	Salted & Dried			56	1439			
Puntazzo	Muscle							
<u>Puntazzo puntazzo</u>	Raw				532	1440		
Queenfish, Leatherjacket	Muscle							
<u>Chorinemus tol</u>	Raw			16	398			
Rabbitfish	Muscle							
<u>Siganus (Teuthis) javis</u>	Raw	76	322 192-451	42 41-42	288 122-455			
	Dried		2	213	2			
	Salted & Fermented			504	288 435			
Ray, Eagle	Muscle							
<u>Actobatus peruvianus</u>	Raw			66	308			
	Cooked							
	Roasted			15	215			
Ray, Eagle	Muscle							
<u>Rhinoptera seweli</u>	Raw			179	275			
Ray, Electric	Muscle							
<u>Torpedo (ocellata) torpedo</u>	Raw				671	170		
Redfish, Ocean Perch	Muscle							
<u>Sebastes marinus</u>	Raw	81 59-111 4	307 269-345 2	141	223	141	304	
Roach	Muscle							
<u>Rutilus rutilus</u>	Raw		270	50	192			
	Whole							
	Fishmeal			790	560			
Rockfish, Black	Muscle							
<u>Sebastes melanops</u>	Raw	66	432					
Rockfish, Boccaccio	Muscle							
<u>Sebastes paucispinus</u>	Raw	60	411	53	238			
Rockfish, Canary	Muscle							
<u>Sebastes pinniger</u>	Raw	61 46-71 3	366 347-384 2					
Rockfish, Chilipepper	Muscle							
<u>Sebastes goodei</u>	Raw	55	305					
Rockfish, Greenstriped	Muscle							
<u>Sebastes elongatus</u>	Raw	68	414					
Rockfish, Idiot	Muscle							
<u>Sebastes alascanus</u>	Raw	77	344					
Rockfish, Mebara	Muscle							
<u>Sebastes inermis</u>	Raw			48	334			
Rockfish, Osaga	Muscle							
<u>Sebastes iracundus</u>	Raw			6	196			
Rockfish, Red	Muscle							
<u>Sebastes matsubarae</u>	Raw	94			160			
Rockfish, Red	Muscle							
<u>Sebastes ruberrimus</u>	Raw	66	413					

Table 13.--Macroelement composition of finfishes, whales, and products.

Common and Scientific Name	Description	Sodium mg	Potassium mg	Calcium mg	Phosphorus mg Per 100 grams	Chlorine mg	Sulfur mg	Magnesium mg
Rockfish, Yellowtail <u>Sebastes flavidus</u>	Muscle Raw	54 50-59 3	382 358-406 2					
Runner, Blue <u>Caranx crysos</u>	Muscle Raw			72	316			
Runner, Rainbow <u>Elagatis bipinnulatus</u>	Muscle Raw	54	430 417-442 2	30	188			
Sablefish <u>Anoplopoma fimbria</u>	Muscle Raw		580	35 7-77 3	168 150-187 2			55
Salmon, Atlantic <u>Salmo salar</u>	Muscle Raw		410 380-440 2	15	220		200	32
Salmon, Australian <u>Arripis georgianus</u>	Muscle Raw	50	250	40	240			30
Salmon, Australian <u>Arripis trutta</u>	Muscle Raw	60	235	35	155			25
	Whole Raw				769	115		
Salmon, Cherry <u>Oncorhynchus masou</u>	Muscle Raw			140	993			
	Canned Boiled Salted			28 11	157 362			
Salmon, Chinook <u>Oncorhynchus tshawytscha</u>	Muscle Raw	42 38-45 2	266 160-372 2	20	289			95
	Canned			154 107-200 4	296 278-326 4			27
Salmon, Chum <u>Oncorhynchus keta</u>	Muscle Raw	50	362 296-429 2	12 9-16 2				22 13-32 2
	Canned	48	339	249	352			30
Salmon, Coho <u>Oncorhynchus kisutch</u>	Muscle Raw	38 26-51 4	445 421-469 3	36 28-43 2	231 212-250 2			29
	Canned	184 47-322 2	308	249 230-286 3	296 254-338 3	73		30
	Cured	2500		50	250			
	Salted	3200		30	250			
	Salted & Smoked	2900		43	340			
Salmon, Longtooth <u>Otolithes ruber</u>	Eviscerated Raw			214	266			
Salmon, Pink <u>Oncorhynchus gorbuscha</u>	Muscle Raw	78 56-110 5	330 258-443 4	13	230			

Table 13.--Macroelement composition of finfishes, whales, and products.

Common and Scientific Name	Description	Sodium mg	Potassium mg	Calcium mg	Phosphorus mg Per 100 grams	Chlorine mg	Sulfur mg	Magnesium mg
	Canned	700		158 110-196	310 290-321			30
	Salted	3200		4 10	3 360			
Salmon, Sockeye <u>Oncorhynchus nerka</u>	Muscle Raw	48 34-61	376 339-411	176	231			
		4	4					
	Canned	355 44-628	364 308-425	178 22-272	316 273-392			35 29-47
		5	4	7	7			3
Salmon Salmonidae	Muscle Raw	76 37-170	384 351-410	16 10-25	245 200-270	74	199 192-212	
		4	4	4	6		3	
	Canned Boiled	500		170	320			
	Unspecified	440	376	203	298	865	221	46
		60-623	300-472	66-472	248-353		176-241	30-62
		4	4	12	10		4	2
	Cooked Steamed	107	333	29	302			
	Cured	2500		50	250	64	190	29
	Salted	3200		23	336			
				16-30	260-412			
	Smoked	2900		2 48 43-53	2 524 340-707			
				2	2			
	Offal Fishmeal			5200	3100			
Sandfish <u>Arctoscopus japonicus</u>	Muscle Raw			45 29-61	216 184-248			
				2	2			
	Salted			28	250			
Sandfish Trichodontidae	Muscle Salted & Dried			28	250			
Sardine <u>Clupanodon pseudohispanicus</u>	Muscle Raw			127	302			
Sardine <u>Opisthopterus tartoor</u>	Whole Raw			1065	227			
Sardine <u>Sardinella eba</u>	Muscle Raw			380	710			
Sardine, Golden <u>Sardinella aurita</u>	Muscle Raw				331	140		
Sardine, Indian <u>Sardinella longiceps</u>	Muscle Raw	61	420	212 96-336	280 175-345			
				3	3			
	Muscle with Bones Salted & Dried			283	315			
	Smoked	5175	723	203	175			
Sardine, Spotted <u>Sardinella sirum</u>	Muscle Dried			283	315			
	Salted & Dried	6672	672					

Table 13.--Macroelement composition of finfishes, whales, and products.

Common and Scientific Name	Description	Sodium mg	Potassium mg	Calcium mg	Phosphorus mg Per 100 grams	Chlorine mg	Sulfur mg	Magnesium mg
Sardine <i>Clupeidae</i>	Muscle Raw	100	55	73 50-90 3	240 240-240 2		229	4
	Canned In Oil							
	Smoked	558		350 421	440 438	870	246	
	Unspecified	550-565 2		29-1254 8	299-701 7			
	In Tomato Sauce			360	380			
	Smoked		476	302	375			64
	Unspecified	321		240-363 2	370-380 2			
	Marinated			230	320			
	Unspecified	785	433	371 297-409 10	369 137-683 8	865	270 258-283 2	41
	Dried			27	308			
	Salted & Dried	1425 750-2100 2		825 300-1350 2	825 450-1200 2			
	Smoked	5189	723	2416				
	Whole Raw			554 184-870 4	944 556-1730 4	1290		30
	Fishmeal			3700	2700			
Saury, Pacific <i>Cololabis saira</i>	Muscle Raw	60	285	22 11-34 3	206 190-222 2			12
	Canned							
	In Tomato Sauce	500		320	330			
	Seasoned	1000		290	350			
	Unspecified		201	162				
	Dried & Seasoned	1600		120	250			
	Salted & Dried			32 30-33 2	320 220-420 2			
Sawfish <i>Pristidae</i>	Muscle Raw			54	238			
Scad, Big-bodied <i>Decapterus macrosoma</i>	Muscle Raw	81	404	71	214			
	Salted & Dried	4044 3162-4925 2	730 700-760 2	622 614-629 2	726 534-917 2			
Scad, Big-eyed <i>Caranx crumenophthalmus</i>	Muscle Raw	61	614	28 6-50 2	247 115-386 3			
	Salted & Dried	3016 61-5971 2	608 601-614 2	191 50-332 2	166 115-217 2			
	Smoked			101	186			
Scad, Golden <i>Caranx kalla</i>	Muscle Raw	100	455	93	221			

Table 13.--Macroelement composition of finfishes, whales, and products.

Common and Scientific Name	Description	Sodium mg	Potassium mg	Calcium mg	Phosphorus mg Per 100 grams	Chlorine mg	Fluorine mg	Magnesium mg
Scad, Mackerel <u>Decapterus macarellus</u>	Muscle Raw			23	148			
Scorpionfish, Yellow <u>Scorpaena scropha</u>	Muscle Raw				427	70		
Scorpionfish Scorpenidae	Muscle Raw	65 45-79 3	269	32 20-39 3	198 100-160			
	Whole Raw							
	Fishmeal	133	294					
	Dried Raw	755	2180	4080	2345	1190		195
	Steamed & Dried	945	1370	4080	3015	1185		200
	Unspecified			7200	4000			
Sculpin <u>Cottus pollux</u>	Muscle Dried			4124	1439			
Sculpin, Sea Raven <u>Hemitripterus americanus</u>	Muscle Cooked Steamed	152	328	17	218	120	250	26
Sculpin, Shorthorn <u>Myoxocephalus scorpius</u>	Muscle Raw	55	332					
Scup, Sea Bream <u>Stenotomus chrysops</u>	Muscle Raw	63	287					
Sea Crow <u>Corvina nigrita</u>	Muscle Raw			9	289 129-449 2	730		
Sea Robin, Gurnard <u>Trigla carax</u>	Muscle Raw				296	190		
Sea Robin, Red Gurnard <u>Trigla capensis</u>	Beheaded Raw			1072	655			
Sea Robin Triglidae	Muscle Raw		254	98	147			
Sea Trout, Corvina <u>Cilus monti</u>	Muscle Raw			38		216		
Sea Trout, Grey <u>Cynoscion regalis</u>	Muscle Raw	59	317					
Sea Trout, Sand <u>Cynoscion arenarius</u>	Muscle Raw	54	218					
Shad <u>Clupea alosa</u>	Muscle Raw		162		326	140		
Shad <u>Ethmalosa dorsalis</u>	Muscle Raw			138	200			
	Whole Dried			1640	540			
Shad, American <u>Alosa sapidissima</u>	Muscle Raw	54	330					
Shad, Bastard <u>Konosirus thrissa</u>	Muscle Raw			29				21

Table 13.--Macroelement composition of finfishes, whales, and products.

Common and Scientific Name	Description	Sodium mg	Potassium mg	Calcium mg	Phosphorus mg Per 100 grams	Chlorine mg	Sulfur mg	Magnesium mg
Shad, Gizzard <u>Anodontostoma chacunda</u>	Muscle							
	Raw	98	417	125	194			
	Salted & Dried	6671	775	496	483			
				492-500	483-483			
				2	2			
	Smoked			302	219			
Shad, Gizzard <u>Dorosoma cepedianum</u>	Muscle			120	380			
Shad, Hickory <u>Alosa mediocris</u>	Muscle			24	340			
	Raw							
Shad, Indian <u>Clupea toli</u>	Muscle			23	567			
	Raw							
Shad, Indian <u>Hilsa ilisha</u>	Muscle			101	273			
	Raw	52	183	22-180	266-280			
				2	2			
Shad, Slender <u>Ilisha elongata</u>	Muscle			39	231			
	Raw							
Shad, Threadfin <u>Dorosoma petenense</u>	Whole			142	77			
	Raw							
Shad Clupeidae	Muscle							
	Raw	53	307		191	197	209	
					120-262			
					2			
Shadefish, Neagre <u>Sciaenops ocellatus</u>	Muscle							
	Raw	278			110			
		180-375						
		2						
Shark, Blackfinned <u>Carcharhinus melanopterus</u>	Muscle							
	Raw		722	152				68
			676-769	66-237				67-68
			2	2				2
Shark, Blacktip <u>Carcharhinus limbatus</u>	Muscle							
	Raw			13	107			
Shark, Blue <u>Carcharhinus glauca</u>	Muscle			5	150			
	Raw							
Shark, Elephant <u>Callorhynchus milii</u>	Muscle			19	184			
	Raw							
Shark, Gummy <u>Mustelus antarcticus</u>	Muscle							
	Raw	70	290	30	160			10
	Canned							
	Boiled	950		47	225			
	Seasoned	1150		130	250			
Shark, Hammerhead <u>Sphyrna blochii</u>	Muscle							
	Raw			15	118			
Shark, Hammerhead, Smooth <u>Sphyrna zygaena</u>	Muscle							
	Raw	109	464	25	208			
Shark, Mushi <u>Scoliodon sorrakewa</u>	Muscle							
	Salted & Dried			541	507			
Shark, Porbeagle, Mackerel <u>Lamna cornubica</u>	Muscle							
	Raw				214	150		
Shark, Porbeagle, Salmon <u>Lamna ditropis</u>	Muscle			27	168			
	Raw							

Table 13.--Macroelement composition of finfishes, bats, and products.

Common and Scientific Name	Description	Sodium mg	Potassium mg	Calcium mg	Phosphorus mg Per 100 grams	Chlorine mg	Sulfur mg	Magnesium mg
Shark, Requiem <u>Carcharhinidae</u>	Muscle Raw			48 32-59 3	180 169-192 3			
	Salted	834				1304		
Shark, Sand <u>Carcharias glaucas</u>	Muscle Raw				288	140		
Shark, Sharpnose <u>Scoliodon palasorrah</u>	Muscle Raw	79	549	89 14-164 2	194 183-204 2			
Shark, Sharpnose, Pacific <u>Scoliodon longurio</u>	Muscle Raw			108	206			
Shark, Smoothhound <u>Mustelus vulgaris</u>	Muscle Raw				309	150		
Shark, Thresher <u>Alopias vulpinus</u>	Muscle Raw				349	130		
Shark Unspecified	Muscle Raw			14 4-23 2	286			44
Sheathfish <u>Kryptopterus kryptopterus</u>	Muscle Raw			49	152			
Sheathfish <u>Parasilurus asotus</u>	Muscle Raw			59	303			
Sheathfish <u>Tachysurus gambensis</u>	Muscle Raw			13	82			
Sheathfish <u>Tachysurus heudeloti</u>	Muscle Raw			5	167			
Silverside <u>Atherina forskali</u>	Muscle Dried Rinsed & Drained	100	620	540	160			
Silverside <u>Atherina presbyter</u>	Muscle Raw			19	292			
Silverside <u>Austromenidia regia</u>	Muscle Raw			105	311			
Skate, Blue <u>Raja batis</u>	Muscle Raw		240	20	240		227	24
Skate, Flatback <u>Raja kenoi</u>	Muscle Raw			64	131			
Skate, Starry Ray <u>Raja asterias</u>	Muscle Raw				296	210		
Skate, Thornback <u>Raja clavata</u>	Muscle Raw	104	330 273-387 2					
Skate Rajidae	Muscle Raw	90	250	38 5-70 2	155 140-170 2			60
	Cooked Fried Battered & Breaded	182	236	19	238	200	213	24

Table 13.--Macroelement composition of finfishes, whales, and products.

Common and Scientific Name	Description	Sodium mg	Potassium mg	Calcium mg	Phosphorus mg Per 100 grams	Chlorine mg	Sulfur mg	Magnesium mg
Sleeper <u>Eleotris fusca</u>	Muscle Raw			32	218			
Sleeper <u>Oxyeleotris marmorata</u>	Muscle Raw	43	280	19	174	102		31
Slimy, Soapy <u>Leiognathus insidiatrix</u>	Whole Raw			743	755			
Slimy, Soapy, Ponyfish <u>Leiognathus equula</u>	Muscle Raw	162	328 218-437 2	43 33-50 3	288 148-554 3			
	Dried Salted & Dried	5533	745	203	290			
	Whole Raw			1079	663			
Slipmouth, Blackfinned <u>Leiognathus daura</u>	Muscle Raw	130	378	52	159			
Slipmouth <u>Leiognathidae</u>	Muscle Raw			19	339			
Smelt, Lake <u>Osmerus mordax</u>	Muscle with Bones Canned			358	370			
Smelt, Pond <u>Hypomesus olidus</u>	Whole Raw			750	680			
Smelt, Sweet, Ayu <u>Plecoglossus altivelis</u>	Muscle Raw	80		38 26-50 2	249 190-308 2			
	Whole Raw Dried			135 3016	504 278			
Smelt <u>Osmeridae</u>	Muscle with Bones Raw			754	516 354-678 2		202 168-221 3	
	Cooked Boiled & Dried Fried Dried	148	517	274 686 459	1109 535 1934	138	302	59
	Whole Raw		288	567 198-754 3	534 245-680 3			
Snapper <u>Chrysoprys gutturalatus</u>	Muscle Raw	80	400	20	394 160-628 2	90		30
Snapper <u>Lutianus agennes</u>	Muscle Raw			250	131			
Snapper <u>Pristop jubelini</u>	Muscle Raw			40	450			
Snapper, Lane <u>Lutianus synagris</u>	Muscle Raw	33	125					

Table 13.--Macroelement composition of finfishes, whales, and products.

Common and Scientific Name	Description	Sodium mg	Potassium mg	Calcium mg	Phosphorus mg Per 100 grams	Chlorine mg	Sulfur mg	Magnesium mg
Snapper, Malabar <u>Lutianus malabaricus</u>	Muscle Raw		293	56 46-65 2	456 134-778 2			
Snapper, Pargo <u>Lutianus colorado</u>	Muscle Raw			17	204			
Snapper, Red <u>Lutianus aya</u>	Muscle Raw	65	323	18	228			
Snapper, Red <u>Lutianus campechanus (blackfordii)</u>	Muscle Raw	96 63-150 4	292 210-405 4	22 14-30 4	134 23-210 4			24 20-30 2
	Cooked Fried Battered			1024	648			
Snapper, Yellowtail <u>Ocyurus chrysurus</u>	Muscle Raw			28	217			
Snapper Lutianidae	Muscle Raw	90 70-120 3	323 176-420 3	33 17-49 3	192 144-213 4		206 139-224 2	
Snook <u>Centropomus undecimalis</u>	Muscle Raw	80	290	40	120			32
Snook, Constantino <u>Centropomus robalito</u>	Muscle Raw			14	127			
Snook, Nile Perch <u>Lates niloticus</u>	Muscle Raw Dried			89 170	137 662			
Snook, Robalo <u>Centropomus armatus</u>	Muscle Raw			15	204			
Sole <u>Aesopia cornuta</u>	Muscle Raw			18				66
Sole <u>Cynoglossus semifasciatus</u>	Whole Raw			1100	519			
Sole <u>Eopsetta cynoglossus</u>	Muscle Cooked Fried Battered & Breaded Steamed	176 136	300 304	52 30	187 233	187 123	235 152	24 24
Sole, Black <u>Synaptura nigra</u>	Muscle Raw	80	230	30	230			80
Sole, Dover <u>Microstomus pacificus</u>	Muscle Raw	95	323	50	154			
Sole, Dover <u>Solea solea</u>	Muscle Raw		262	34 20-47 2	252 245-259 2			20
Sole, English <u>Parophrys vetulus</u>	Muscle Raw	85 72-91 4	373 330-402 3					

Table 13.--Macroelement composition of finfishes, whales, and products.

Common and Scientific Name	Description	Sodium mg	Potassium mg	Calcium mg	Phosphorus mg Per 100 grams	Chlorine mg	Sulfur mg	Magnesium mg
Sole, European <u>Solea vulgaris</u>	Muscle Raw				258 168-349 2	80		
Sole, Flathead <u>Hippoglossoides elassodon</u>	Muscle Raw	76 73-79 2	180 60-299 2					
Sole, Petrale <u>Eopsetta jordani</u>	Muscle Raw	81 71-96 4	354 268-402 3	10	170			
Sole, Rex <u>Glyptocephalus zachirus</u>	Muscle Raw	150	259	10	110			
Sole, Rock <u>Lepidopsetta bilineata</u>	Muscle Raw	80	380					
Sole, Sand <u>Psettichthys melanostictus</u>	Muscle Raw	56	344					
Sole, Speckled <u>Cynoglossus puncticeps</u>	Muscle Raw		283	32	436			
Sole Soleidae/Pleuronectidae	Muscle Raw		489	38 12-120 5	170 150-195 3		180	29
	Cooked Fried Battered & Breaded	164	243	113	250	158	227	25
	Steamed	112	260	67	258	74	238	24
Spadefish <u>Chaetodipterus faber</u>	Muscle Raw			37	191			
	Whole Raw			135	76			
Spadefish <u>Scatophagus argus</u>	Muscle Raw	94 90-98 2	331 292-370 2	67 60-74 2	246 211-280 2			40
Spot <u>Leiostomus xanthurus</u>	Muscle Raw			90	220			
Sprat <u>Sprattus sprattus</u>	Muscle with Bones Canned In Oil Dried Smoked Unspecified In Tomato Sauce Smoked Unspecified Cooked Fried Grilled	132 845	409 483	707 436	635 565	182 1330	280 275	46 40
	Whole Raw Dried			280 855	400 1165			
Stargazer <u>Uranoscopus scaber</u>	Muscle Raw				357	200		

Table 13.--Macroelement composition of finfishes, whales, and products

Common and Scientific Name	Description	Sodium mg	Potassium mg	Calcium mg	Phosphorus mg Per 100 grams	Chlorine mg	Sulfur mg	Magnesium mg
Steenbras, Sand, Seebes <u>Lithognathus mormyrus</u>	Muscle Raw			123	291 268-314 2	90		
Stingray <u>Dasyatis pastinaca</u>	Muscle Raw	133	352					
Stingray, Blue Spotted <u>Dasyatis kuhlii</u>	Muscle Raw	168	241	25	99			
Stingray, Butterfly <u>Pteroplaty altavela</u>	Muscle Raw			9	108			
Stingray, Marbled <u>Dasyatis uarnak</u>	Muscle Raw	179	236	22 19-25 2	157 152-170 3			
Stingray, Thronback <u>Dasyatis aksaei</u>	Muscle Dried			211	1522			
Stingray Dasyatidae	Muscle Raw			14 9-20 2	117			38
Sturgeon <u>Acipenser sturio</u>	Muscle Raw Cooked Steamed		284		466 263	130		
Sturgeon Acipenseridae	Muscle Cooked Steamed	108	235	15	263	138	291	19
Sucker, Carp <u>Carpionides meridionalis</u>	Muscle Raw			15	165			
Sucker Catostomidae	Muscle Raw	53 50-57 3	316 292-344 3					
Sunfish, Bluegill <u>Lepomis macrochirus</u>	Whole Raw			234	125			
Surgeonfish <u>Acanthurus bleekeri</u>	Muscle Raw	60	394 243-546 2	33 21-45 2	336 169-503 2			
Swordfish <u>Xiphias gladius</u>	Muscle Raw	102	342	10 7-13 2	506 228-745 3	130		
Tarpon, Bid-Bid <u>Elops hawaiiensis</u>	Muscle Raw	82	491	78 65-92 2	208 192-225 2			
Tarpon, Buan-Buan <u>Megalops cyprinoides</u>	Muscle Raw	82	360	54	263			

Table 13.--Macroelement composition of finfishes, whales, and products.

Common and Scientific Name	Description	Sodium mg	Potassium mg	Calcium mg	Phosphorus mg Per 100 grams	Chlorine mg	Sulfur mg	Magnesium mg
Tarpon <i>Elopidae</i>	Muscle with Bones Dried	24	336	1592	789			58
Tench <i>Tinca tinca</i>	Muscle Raw		300	20	207		161	24
Tench <i>Tinca vulgaris</i>	Muscle Raw				266	70		
Therapon <i>Therapon plumbeus</i>	Whole Dried			5317	1356			
Therapon, Large Scaled, Banded Grunter <i>Therapon theraps</i>	Muscle Raw	65	353 216-490 2	50 41-59 2	324 213-435 2			
Therapon, Tigerfish <i>Therapon jarbua</i>	Muscle Raw	101	459	40	193			
Therapon <i>Theraponidae</i>	Muscle Raw	83	474	50	203			
Threadfin <i>Galeoides decadactylus</i>	Muscle Raw			10	198			
Threadfin <i>Pentanemus quinquarias</i>	Muscle Raw			10	166			
Threadfin <i>Polynemus heptadactylus</i>	Muscle Raw			314	244			
Threadfin <i>Polynemus indicus</i>	Muscle Raw			15	125			
	Whole Dried			1740	4630			
Threadfin <i>Polynemus paradiseus</i>	Muscle Salted & Dried			190	422			
Threadfin, Four-rayed <i>Polynemus tetradactylus</i>	Muscle Raw Fishmeal	87	372	20 158	398 143			
Threadfin, Shiny-nose <i>Polydactylus quadrifilis</i>	Muscle Raw			177	148			
Threadfin, Small Mouth <i>Polynemus microstoma</i>	Muscle Raw	101	391	35	183			
Threadfin <i>Polynemidae</i>	Muscle Raw	82 60-96 3	386 240-481 3	61 20-96 3	166 160-174 4			30
Tilapia, Mozambique Mouthbrooder <i>Tilapia mossambica</i>	Muscle Raw	52	454	54	154 135-172 2			
Tilefish <i>Branchiostegus japonicus</i>	Muscle Raw			10	242			13
Tilefish <i>Branchiostegidae</i>	Muscle Raw			40 40-40 2	234 217-250 2			

Table 13.--Macroelement composition of finfishes, whales, and products.

Common and Scientific Name	Description	Sodium mg	Potassium mg	Calcium mg	Phosphorus mg Per 100 grams	Chlorine mg	Sulfur mg	Magnesium mg
Torpedo, Panga <i>Megalaspis cordyla</i>	Muscle Raw	102	390	45	140			
Trevally <i>Caranx georgianus</i>	Muscle Raw	70	340	40	150			30
Trevally, Great, Talaritok <i>Caranx sexfasciatus</i>	Muscle Raw Salted & Dried			63 137	186 277			
Tripletail <i>Lobotes surinamensis</i>	Whole Dried			2400	4200			
Trout, Brook <i>Salvelinus fontinalis</i>	Muscle Raw				267		193	
Trout, Brown <i>Salmo trutta</i>	Muscle Raw		354 327-380 2	20	267		244	25
Trout, Lake <i>Salvelinus namaycush</i>	Muscle Raw	24	154		240			
Trout, Pollan <i>Coregonus pollan</i>	Muscle Cooked Fried Covered with Oatmeal Steamed	64 69	390 373	200 82	367 287	64 71	228 220	26 23
Trout, Rainbow <i>Salmo gairdneri</i>	Muscle Raw	52	488	32 25-38 2	196 170-240 3			
Trout Salmonidae	Muscle Raw Canned Salted Cooked Steamed	38 148	406 296-516 2 344	16 12-20 2 427 24	221 152-290 2 315 280	100 166	169 238	26 30
Tuna <i>Thunnus orientalis</i>	Muscle Raw Dried			5 160	375 880			
Tuna, Albacore <i>Thunnus alalunga</i>	Muscle Raw Canned In Oil With Salt Without Salt Muscle with Bone Canned	51 34-85 4 536 875 45 38	308 293-322 2 27 275 274 283	8 6-11 2 314	422 250-595 2			57
Tuna, Big-eye <i>Thunnus obesus</i>	Muscle Raw			7 4-9 3	290 202-378 2			28
Tuna, Bluefin <i>Thunnus thynnus</i>	Muscle Raw Canned	76 39-100 3		8 5-11 3 28	254 190-327 4 292	140		

Table 13.--Macroelement composition of finfishes, whales, and products.

Common and Scientific Name	Description	Sodium mg	Potassium mg	Calcium mg	Phosphorus mg Per 100 grams	Chlorine mg	Sulfur mg	Magnesium mg
Tuna, Skipjack <u>Euthynnus pelamis</u>	Muscle							
	Raw	37 25-52 5	378 281-416 4	24 6-94 7	324 148-871 6	133		54
	Canned							
	In Oil			24	250			
	Salted			140	280			
	Unspecified			17	240			
Tuna, Skipjack Scombridae	Muscle							
	Raw	100		18 8-29 2	220			
	Dried	280		15 13-17 2	445 350-540 2			
Tuna, Yellowfin <u>Thunnus albacares</u>	Muscle							
	Raw	261 37-489 4	444 370-518 2	25 2-90 6	272 220-400 6	910		50
	Canned							
	In Oil			3	270			
	Plain	950		70	200			
	Seasoned	1000		120	220			
Tuna Scombridae	Muscle							
	Raw	504 75-803 4	386 369-402 2	12 9-15 2	774 730-817 2	1213 1189-1237 2		
	Canned							
	Baby Food				180	40		
	In Bouillon			60	110			
	In Oil							
	Drained	928	653	13 8-18 2	371			106
	Unspecified	704	284	20 8-40 4	242 150-350 4			
	In Water	296 44-548 2	320 310-330 2	6 5-6 2	201 184-218 2			23
	Unspecified	769 632-876 3	282 222-376 4	32 7-65 16	246 144-351 14		196	
	Offal							
	Fishmeal	73	73	3095 890-5300 2	1735 470-3000 2			23
Tunny <u>Thunnus vulgaris</u>	Muscle							
	Raw		252		662	70		
Tunny, Little <u>Euthynnus alletteratus</u>	Muscle							
	Raw			51 50-52 2	418 76-760 2			
Turbot <u>Reinhardtius hippoglossoides</u>	Muscle							
	Raw		500	12 11-12 2				48

Table 13.--Macroelement composition of finfishes, whales, and products.

Common and Scientific Name	Description	Sodium mg	Potassium mg	Calcium mg	Phosphorus mg Per 100 grams	Chlorine mg	Sulfur mg	Magnesium mg
Turbot, Arrowtooth <u>Atheresthes stomias</u>	Muscle Raw	59	416 394-437 2	20 17-22 2	188			69
Turbot Pleuronectidae	Muscle Raw Cooked Steamed				210 188		188	
Viperfish <u>Chauliodus sloani</u>	Muscle Raw	150	250	43	118	240		25
Wahoo <u>Acanthocybium solanderi</u>	Muscle Raw			5	220			
Weakfish <u>Larimus peli</u>	Muscle Raw			50	196			
Weever, Greater <u>Trachinus draco</u>	Muscle Raw		213		423	50		
Whale Unspecified	Muscle Raw Fishmeal	70	300	18 4-31 2 425		80 325		63 22-104 2
Whitefish, Lake <u>Coregonus clupeaformis</u>	Muscle Raw	52 51-53 2	307 297-317 2					
Whitefish Salmonidae	Muscle Raw Smoked	53 1318	357		310	2062	164	
Whiting <u>Merlangus merlangus</u>	Muscle Raw			45	240	202		30
Whiting <u>Sillago japonica</u>	Muscle Raw			16				21
Whiting, Australian <u>Sillago sihama</u>	Muscle Raw	107 96-118 2	457	60 42-71 3	204 177-253 4			
Whiting, Blue <u>Micromesistius poutassou</u>	Muscle Raw	51		24				
Whiting Sillaginidae	Muscle Raw Cooked Fried Battered & Breaded Steamed	50 86 127	260 203 299	30 29 42	130 128 189		257 208 307	
Wolfish, Atlantic <u>Anarhichas lupus</u>	Muscle Raw	76		6				
Wrasse, Bass <u>Labrax (Roccus) lupus</u>	Muscle Raw		358		566	50		
Wrasse, Peacock <u>Crenilabrus pavo</u>	Muscle Raw				388	100		
Wrasse, Pintade <u>Coris gioffredi</u>	Muscle Raw				1050	1440		
Wrasse, Spinola <u>Labrus turdus</u>	Muscle Raw				614	80		
Wrasse Labridae	Muscle Raw	50	422					
Wreckfish <u>Polyprion cernium</u>	Muscle Raw				327	90		
Wreckfish, Black Bass <u>Polyprion americanus</u>	Muscle Raw	119	256	74	171			23
Yellowtail Carangidae	Muscle Raw Canned In Oil	75		8 7-10 2 38	289 220-358 2 200			

1/ Average of the means obtained from the literature cited. 3/ Number of mean values, which were reported in the literature cited.

2/ Range of the means found in literature cited.

4/ Method of processing was not clearly described or the fish was identified only by common name.

Table 14.--Macroelement composition of crustaceans and products.

Common and Scientific Name	Description	Sodium mg	Potassium mg	Calcium mg	Phosphorus mg Per 100 grams	Chlorine mg	Sulfur mg	Magnesium mg
Crab <u>Eriphia spinifrons</u>	Muscle Raw	202	321					
Crab <u>Hvas araneus</u>	Muscle Raw	239	368					
Crab <u>Polybius henslowi</u>	Whole Raw		19	40	65			
Crab, Blue <u>Callinectes sapidus</u>	Muscle Raw	337	244 ^{1/} 188-299 ^{2/} 2 3/	115 ^{1/} 60-227 ^{2/} 6 1/	174 ^{1/} 38-272 ^{2/} 7 2/	492	238	32 ^{1/} 12-47 ^{2/} 5 1/
	Canned			66	178			26
	Offal Meal	154 ^{1/} 128-180 ^{2/} 2 3/	121 120-122 2	1788 1775-1800 2	174			96 61-130 2
Crab, Blue, Deep Sea <u>Portunus pelagicus</u>	Muscle Raw	193 120-386 2	463 407-520 2	134 120-140 4	250 180-300 4			130
Crab, Dungeness <u>Cancer magister</u>	Muscle Raw	266 236-296 2	330 305-354 2	52 46-59 2	180 179-180 2	396	366	45
	Canned With Salt	844 791-898 2	179 162-196 2					
	Without Salt Unspecified ^{4/}	169	286	32 13-52 2	90 10-169 2			25
Crab, Edible <u>Cancer pagurus</u>	Muscle Canned Cooked Boiled			17 29 271	181 350			48
Crab, Jonah <u>Cancer borealis</u>	Muscle Raw	276	279	96	120			45
Crab, King <u>Paralithodes camtschatica</u>	Muscle Raw	70		49 42-55 2	186 160-212 2			
	Canned Boiled Unspecified Cooked Unspecified	250		54 28 55	210 173 228		530	45
	Offal Meal	236 120-352 2	82 80-83 2	690	119			205 60-350 2
Crab, Necora, Cangrejos <u>Cancer polydon</u>	Muscle Cooked Baked			1740	688			
Crab, Queen <u>Chionoectes opilio</u>	Muscle Raw Canned	420 704	239 141	45 42	69 47			29 25

Table 14.--Macroelement composition of crustaceans and products.

Common and Scientific Name	Description	Sodium mg	Potassium mg	Calcium mg	Phosphorus mg Per 100 grams	Chlorine mg	Sulfur mg	Magnesium mg
Crab, Red <u>Podaphehalmus vigil</u>	Muscle Raw Cooked Boiled			50 47	120 180			
Crab, Red, Deep Sea <u>Geryon quinquedens</u>	Muscle Raw	406	284	46	46			48
Crab, Rock <u>Cancer irroratus</u>	Muscle with Shell Raw	886	295	5117				310
Crab, Samoan <u>Scylla serrata</u>	Muscle Raw	280	369	92 53-130 3	445 152-893 3			
Crab, Sand <u>Platyonichus ocellatus</u>	Muscle Raw		153	134	47			8
Crab, Shore, Common, Green <u>Carcinus maenas</u>	Muscle Raw	228	328					
Crab, Small <u>Potamon grapsoides</u>	Muscle Raw	453	273					
Crab Unspecified	Muscle Raw Canned Cooked Boiled Unspecified Paste Salted Offal Meal	330 95-457 4 750 500-1000 2 368 366-370 2 11500 1140	232 111-322 4 182 110-265 3 271 360 553 437-669 2 1150 1150	60 13-120 10 80 25-171 3 29 70 299 220-378 2 15684 400-1900 2	246 147-450 12 164 3 350 490 230 203-260 3 1264 510-1720 6			49 48-50 2 41 48 48
Crayfish <u>Astacus fluviatilis</u>	Muscle Raw		260	97 49-145 2	226 103-349 2		258	42
Crayfish, Painted <u>Panulirus ornatus</u>	Muscle Raw			41	178			
Crayfish Unspecified	Muscle Raw Canned	182	500 610	58 133 65-270 3	230 161 101-192 3	500	196 1/2 193-290 2/2	
Lobster <u>Homarus vulgaris</u>	Muscle Raw				240		104	
Lobster, Norway <u>Nephrops norvegicus</u>	Muscle Raw	396	297	56 31-80 2	83			
Lobster, Red <u>Jasus lalandii</u>	Muscle Raw	60	240	40	270			

Table 14.--Macroelement composition of crustaceans and products.

Common and Scientific Name	Description	Sodium mg	Potassium mg	Calcium mg	Phosphorus mg Per 100 grams	Chlorine mg	Sulfur mg	Magnesium mg
Lobster, Spiny <u>Panulirus argus</u>	Muscle Raw			50	214			
Lobster, Spiny <u>Panulirus vulgaris</u>	Muscle Raw		239	88	25			
Lobster Unspecified	Muscle Raw	296 194-460 3	338 202-500 4	39 16-61 7	254 182-560 7	280	136	174 21-422 3
	Cooked Boiled	262 210-325 3	219 180-258 2	62	283	525	514	34
	Dried	22	312	1128	530			104
	Offal Meal	1490	630	10595 9720-11470 2	1360 1000-1720 2	1670		790
Shrimp <u>Crangon vulgaris</u>	Muscle Raw		193 143-243 2	58 53-62 2	274 267-280 2			35
Shrimp <u>Cryphiops caementarius</u>	Muscle Raw			117	262			
Shrimp, Bagda <u>Palaemon carcinus</u>	Muscle Raw	66	262					
	Eviscerated Raw			290	420			
Shrimp <u>Penaeus caraimote</u>	Muscle Raw			23	39			
Shrimp <u>Penaeus incisipes</u>	Muscle Raw			138	217			
Shrimp <u>Penaeus semisulcatus</u>	Muscle Raw			279	327			
Shrimp <u>Trachypenaeus asper</u>	Muscle Raw			186	262			
Shrimp, Brazilian <u>Penaeus brasiliensis</u>	Muscle Raw Cooked Boiled			54 61	229 243			42
Shrimp, Brine <u>Artemia salina</u>	Whole Raw	511	83	10	93			22
Shrimp, Brown <u>Penaeus aztecus</u>	Muscle Raw	208 197-220 2	288 220-357 2	89 50-158 3	258 235-291 3	240	283	37
Shrimp, Fresh Water Unspecified	Muscle Raw	232 45-418 2	217 118-316 2		292			
	Dried Paste	1084	943	2700 926	1500 661			
	Salted & Dried	1000	943	591	716			
	Soaked & Drained	300	284	178	215			
	Salted & Fermented	7045	288					

Table 14.--Macroelement composition of crustaceans and products.

Common and Scientific Name	Description	Sodium mg	Potassium mg	Calcium mg	Phosphorus mg Per 100 grams	Chlorine mg	Sulfur mg	Magnesium mg
	Whole Raw	418	316	161	292			
Shrimp, Camba <u>Penaeus longirostris</u>	Muscle Raw		386	158 10-305 2	163 67-259 2			
Shrimp, Indian <u>Hippolytina ensirostris</u>	Muscle Raw		90	134				
Shrimp, Indian <u>Penaeus carinatus</u>	Muscle Raw			122 92-153 2	296			
Shrimp, Indian <u>Penaeus penicillatus</u>	Muscle Raw			171	292			
Shrimp, Indian <u>Peneopsis dobsonii</u>	Muscle Raw			157	336			
Shrimp, Indian <u>Solenocera indicus</u>	Muscle Raw			98	142			
Shrimp, Indian <u>Squilla mantis</u>	Muscle Raw		260	62	250		170	31
Shrimp, Indian <u>Squilla oratorio</u>	Muscle Raw			14	646			
Shrimp, Indian Prawn <u>Metapenaeus affinis</u>	Muscle Raw			124	200			
Shrimp, Indian Prawn <u>Metapenaeus brevicornis</u>	Muscle Raw			115	188			
Shrimp, Indian Prawn <u>Metapenaeus monoceros</u>	Muscle Raw			122	194			
Shrimp, Indian Prawn <u>Penaeus sculptilis</u>	Muscle Raw			64 21-107 2	159 158-160 2			
Shrimp, Indian Prawn <u>Penaeus styliiferus</u>	Muscle Raw			66 16-117 2	170 169-170 2			
Shrimp, Indian Prawn <u>Penaeus tenuipes</u>	Muscle Raw			90	127			
Shrimp, Indian Prawn <u>Penaeus maxillipedo</u>	Muscle Raw			162	269			
Shrimp, Jumbo <u>Penaeus monodon</u>	Muscle Raw	185	370	180 74-286 2	325 235-345 2			
Shrimp, Ocean <u>Pandalus platyceros</u>	Whole Meal			11000	1850			
Shrimp, Opossum, Kuruma <u>Penaeus japonicus</u>	Muscle Raw Dried			550 1800	340 1100			

Table 14.--Macroelement composition of crustaceans and products.

Common and Scientific Name	Description	Sodium mg	Potassium mg	Calcium mg	Phosphorus mg Per 100 grams	Chlorine mg	Sulfur mg	Magnesium mg
Shrimp, Pink <u>Penaeus duorarum</u>	Muscle Raw			110	215			
Shrimp, Pink, Maine <u>Pandalus borealis</u>	Muscle Raw	596		54	177			
Shrimp, Tiger <u>Penaeus esculentus</u>	Muscle Raw			50	260			
Shrimp, White <u>Penaeus indicus</u>	Muscle Raw			160 152-166	295 210-397			
				3	3			
	Salted & Fermented			469	228			
Shrimp, White <u>Penaeus schmitti</u>	Muscle Raw			75	278			
Shrimp, White <u>Penaeus setiferus</u>	Muscle Raw			77 50-112	206 187-233			
				3	3			
	Canned							
	Dry Pack			126	286			
	Wet Pack							
	With Salt			80	194			
	Unspecified			63	155			
Shrimp Penaeidae	Muscle Raw	155 100-185	336 294-380	58 28-83	186 150-253			46 42-50
		3	3	4	4			2
	Canned							
	Boiled			63	210			
	Unspecified			55	149			
	Dried			465	757			
				236-632	597-995			
				3	3			
	Salted			2440	650			
	Salted & Dried	3907	915					
Shrimp Unspecified	Muscle Raw	111 84-140	257 140-410	89 11-233	218 150-310		337	75 40-111
		3	3	14	12			3
	Canned							
	Dry Pack			104	240			
	Wet Pack			55	149			
	With Salt	2300	163	18	141			23
	Unspecified			84	195		340	
				52-115	157-263			
				2	3			
	Cooked							
	Boiled			50	190			
	Fried			114	253			
	Unspecified	2715	332	232	310	4200	306 258-353	74
							2	
	Dried			1131 231-2306	627 604-652			
				4	3			
	Salted & Dried			444 205-684	779			
				2				
	Whole							
	Raw			1081	207		1220	
	Eviscerated							
	Raw			261	267			

1/ Average of the means obtained from the literature cited.

2/ Range of the means found in literature cited.

3/ Number of mean values, which were reported in the literature cited.

4/ Method of processing was not clearly described or the fish was identified only by common name.

Table 15.--Macroelement composition of mollusks and products.

Common and Scientific Name	Description	Sodium mg	Potassium mg	Calcium mg	Phosphorus mg Per 100 grams	Chlorine mg	Sulfur mg	Magnesium mg
Abalone <u>Haliotis gigantea</u>	Muscle Raw			22 ^{1/2} / 11-34 ^{2/2} / 2 ^{2/2}	212 ^{1/2} / 169-254 ^{2/2} / 2 ^{2/2}			
	Canned Seasoned	900 990	110	310 10 9-10 2	130 116 82-150 2			
	Whole Raw			11	187			
Abalone <u>Haliotis japonica</u>	Muscle Raw			22 13-30 2	116 41-190 2			
Abalone, Green <u>Haliotis fulgens</u>	Muscle Raw			24	159			
Abalone Haliotidae	Muscle Raw			34 32-37 2	190 190-191 2			175
	Canned Boiled Seasoned Unspecified ^{4/}	900		27 310 18 14-23 2	100 130 128			
	Dried			101 32-170 2	316 190-442 2			
	Whole Salted	5200		250	140			
Clam, Arkshell <u>Anadara broughtoni</u>	Muscle Raw			28 16-40 2	161 140-182 2			
	Whole Raw			18	177			
Clam, Arkshell <u>Arca noae</u>	Muscle Raw	293	121	100	110			99
Clam, Arkshell Arcidae	Muscle Raw	120	149	101 40-174 5	114 85-140 4			
	Canned Seasoned Unspecified	1100	521	60 43	140			
Clam, Donax, Bean <u>Donax radians</u>	Whole Raw	562	228	78	115			
Clam, Fresh Water <u>Corbicula fluminea</u>	Whole Raw Cooked Unspecified		122	176 80	77			6
Clam, Fresh Water, Corbshell <u>Corbicula leana</u>	Whole Raw			72	203			

Table 15.--Macroelement composition of mollusks and products.

Common and Scientific Name	Description	Sodium mg	Potassium mg	Calcium mg	Phosphorus mg Per 100 grams	Chlorine mg	Sulfur mg	Magnesium mg
Clam, Fresh Water Unspecified	Whole Raw	392 ¹ / _{140-645²/₂}	149	170	120			
Clam, Green <u>Cyrena ventricosa</u>	Whole Raw			87 56-117 2	103 101-105 2			
Clam, Mactra, Surf <u>Mactra sachalinensis</u>	Muscle Raw			24	478			
Clam, Mactra, Surf <u>Spisula solidissima</u>	Muscle Raw			41	194			
Clam, Mactra Mactridae	Muscle Raw			51 42-60 2	208 90-325 2			
Clam, Razor <u>Solen gouldi</u>	Whole Raw			94	770			
Clam, Razor Solenidae	Whole Raw		143	50 14-75 3	164 140-198 3			
Clam, Softshell <u>Mya arenaria</u>	Whole Raw			53	152			
Clam, Tellin <u>Soletellina cumingiana</u>	Whole Raw	939	116					
Clam, Tellin, Rayed-shell <u>Soletellina psammatea</u>	Whole Raw	262	164	121	83			
Clam, Venus <u>Meretrix casta</u>	Whole Raw			139	141			
Clam, Venus <u>Tapes pullastra</u>	Whole Raw			144	350			
Clam, Venus <u>Venus gallina</u>	Whole Raw	201	138	159 69-275 3	121 61-174 5			
Clam, Venus <u>Venus verrucosa</u>	Whole Raw		35	235	133		415	86
Clam, Venus, Butter <u>Saxidomus giganteus</u>	Whole Raw			41	194			
Clam, Venus, Hard <u>Venus lusoria</u>	Whole Raw			11	121			
Clam, Venus, Littleneck, Japanese <u>Tapes (Venerupis) decussatus</u>	Whole Raw	200		68 6-140 5	143 53-235 5			20
	Canned							
	Seasoned	1200		74	280			
	Unspecified	400		88	190			
Clam, Venus, Northern Quahog, Cherrytone <u>Mercenaria mercenaria</u>	Whole Raw			65	69			

Table 15.--Macroelement composition of mollusks and products.

Common and Scientific Name	Description	Sodium mg	Potassium mg	Calcium mg	Phosphorus mg Per 100 grams	Chlorine mg	Sulfur mg	Magnesium mg
Clam, Venus, Pismo <u>Tivela stultorum</u>	Whole Raw			607				259
Clam, Venus Veneridae	Whole Raw	190 180-200 2	240	91 60-125 7	142 90-205 7	1065	340 ^{1/} 323-357 ^{2/} 2	50
	Canned Boiled Seasoned Unspecified	400 1200		85 74 70 55-86 2	190 280 124			
Clam Unspecified	Whole Raw	316 200-432 2	205	83 70-96 3	166 139-210 3		225	
	Canned Seasoned Unspecified Cooked Chowder	2100 410	83 68	75 20 13-28 2	270 136 42 16-67 2			
Cockle <u>Cardium muticum</u>	Whole Raw			37	253			
Cockle <u>Cardium tuberculatum</u>	Whole Cooked Unspecified	3520	43	127	204	5220	322	51
Cockle, Atlantic <u>Cardium edule</u>	Whole Raw	482	188 ^{1/} 76-300 ^{2/} 2	76 19-138 3	7	330		
Cockle, Sand <u>Hemidonax donaciformus</u>	Whole Raw			217	78			
Cockle Cardiidae	Whole Raw Canned With Salt & Soy Sauce Dried	200 1530	197 260	116 190 337 242-432 2	122 260 789 374-1204 2		286	
Cuttlefish <u>Sepia officinalis</u>	Muscle Raw	121	315 190-550 3	28 6-50 2	176 155-198 2	175 ^{1/} 161-189 ^{2/} 2		30
Cuttlefish <u>Sepia orientalis</u>	Muscle Raw	370	510	130	580			
Cuttlefish Sepiidae	Muscle Raw Canned Salted & Seasoned Cooked Unspecified	277 750	268 264-273 2 94	27 21-34 3 10 200	164 143-186 2 180 140			

Table 15.--Macroelement composition of mollusks and products.

Common and Scientific Name	Description	Sodium mg	Potassium mg	Calcium mg	Phosphorus mg Per 100 grams	Chlorine mg	Sulfur mg	Magnesium mg
Mussel <u>Mytilus obscurus</u>	Whole Raw	80	380	80	170			20
Mussel, Blue <u>Mytilus edulis</u>	Whole Raw	688 255-1520 3	747 227-1700 3	85 14-140 3	378 60-1045 4	318		102 23-180 2
	Canned Steamed	181	950	120	1130			130
	Cooked Steamed	1385	1170	140	1195			165
Mussel, European <u>Mytilus galloprovincialis</u>	Whole Raw	144 133-156 2	130 121-140 2	6	216 151-282 2			
Mussel Mytilidae	Whole Raw	214 140-289 2	398 315-480 2	101 52-164 3	166 102-236 3	463	347 326-367 2	23
	Cooked Boiled	210	92	197	331	315	305 262-348 2	25
	Dried		458	308	736			
Octopus <u>Eledone moschata</u>	Muscle Raw			60	159			
Octopus <u>Octopus ocellatus</u>	Muscle Raw			46	109			
Octopus, Curled <u>Eledone cirrhosa</u>	Muscle Raw	91	235	4	174	123		30
Octopus, Devilfish <u>Octopus vulgaris</u>	Muscle Raw		465	18 12-24 2	96 40-151 2	316 193-440 2		
	Dried			142	150			
Octopus Octopodidae	Muscle Raw	363	232	22 4-39 4	130 66-205 4			
	Dried			80	800			
Oyster, Common <u>Ostrea edulis</u>	Whole Raw	650	258	11	21			41
	Cooked Steamed		200	70	200		150	45
Oyster, Eastern <u>Ostrea virginica</u>	Whole Raw			77 57-122 4	132 112-160 4		90	43 32-54 2
	Canned			28	124			
Oyster, Giant Pacific <u>Ostrea gigas</u>	Whole Raw			63	154			24
Oyster, Native Pacific <u>Ostrea lurida</u>	Whole Raw			68 63-74 2	178 164-192 2			48
Oyster, Sidney Rock <u>Ostrea commercialis</u>	Whole Raw	160	570	90	150			50

Table 15.--Macroelement composition of mollusks and products.

Common and Scientific Name	Description	Sodium mg	Potassium mg	Calcium mg	Phosphorus mg Per 100 grams	Chlorine mg	Sulfur mg	Magnesium mg
Oyster <i>Ostreidae</i>	Whole							
	Raw	386 73-882 8	187 90-258 6	111 6-210 12	148 67-267 12	543 156-815 3	256 247-273 3	80 6-230 4
	Canned							
	Smoked, Oil Added			37	250		80	
	Unspecified			28	147 138-153 3			
	Dried		457	317 236-395 3	547 517-601 3			
	Salted & Fermented			139	23			
Penshell <i>Atrina japonica</i>	Muscle							
	Raw			9	414			
Periwinkle <i>Littorinidae</i>	Whole							
	Cooked							
	Boiled							
	In Fresh Water	266	211	165	277	500	446	414
	In Salt Water	1140	154	136	219	1800	377	358
Scallop <i>Chlamys glabra</i>	Muscle							
	Raw	194	170	72	120			92
Scallop <i>Pecten fumatus</i>	Muscle							
	Raw	206	340	40	260			20
Scallop, Atlantic Deep Sea <i>Placopecten magellanicus</i>	Muscle							
	Raw			22	234			
Scallop, Calico <i>Aequipecten gibbus</i>	Muscle							
	Raw			22 13-32 2	210 204-215 2			
Scallop, Common <i>Pecten yessoensis</i>	Muscle							
	Raw			12	112			
	Canned							
	Salted	1100		50	190			
	Unspecified	500		50	170			
	Dried		1579	32	672			
Scallop, Coquille St. Jacques <i>Pecten maximus</i>	Muscle							
	Raw	424	216 45-387 2	34 26-42 2	20			63
Scallop, Iceland <i>Pecten islandicus</i>	Muscle							
	Raw	139 115-163 2	332					
Scallop <i>Pectinidae</i>	Muscle							
	Raw	163 150-176 2	420	46 11-115 4	208 76-340 5	270	316 291-342 2	40
	Cooked							
	Steamed	265	476	115 60	338 521	410	570	38
	Dried			6-114 2	130-912 2			
Snail <i>Achatina marginata</i>	Whole							
	Raw			132	110			

Table 15.--Macroelement composition of mollusks and products.

Common and Scientific Name	Description	Sodium mg	Potassium mg	Calcium mg	Phosphorus mg Per 100 grams	Chlorine mg	Sulfur mg	Magnesium mg
Snail <u>Aporrhais pesceleceni</u>	Whole Raw			1459	182			
Snail <u>Murex brandarix</u>	Whole Raw	166	153	146	191			143
Snail <u>Thais chocolata</u>	Whole Raw			62	97			
Snail, Land <u>Archidoris brittanica</u>	Whole Raw	560	136	2000	126	953		930
Snail, Mud <u>Nassa mutabilis</u>	Whole Raw			1187	181			
Snail, Pond <u>Ampullaria luzonica</u>	Whole Raw	84	117	1658	61			
Snail <u>Vivipara javanica</u>	Whole Raw	77	179	1163	118			
Snail, River <u>Viviparus malleatus</u>	Whole Raw			214	254			
Snail Unspecified	Whole Raw			179 170-188 2	174		140	250
Squid <u>Dosidicus gigas</u>	Whole Meal			1800	1240			
Squid <u>Loligo forbesi</u>	Muscle Raw	102	199	4	191	119		20
Squid <u>Loligo gahi</u>	Muscle Raw			99	219	684		
Squid <u>Loligo ommastrephes</u>	Muscle Raw Cooked Unspecified Dried, Soaked, & Drained Salted & Dried	176 100 944	266 94 604	15 22 10 55	194 246 200 616			
Squid <u>Watasemia scintillans</u>	Muscle Raw			10	420			
Squid, Common <u>Loligo vulgaris</u>	Muscle Raw	317	329 246-429 3	95 35-180 4	266 45-580 4	445		
Squid, Long-finned <u>Loligo pealei</u>	Muscle Dried			49	600			
Squid Unspecified	Muscle Raw Canned Cooked Unspecified Dried Smoked	158 120-195 2 944	314 269-358 2 1068	27 4-56 8 34 46 43-54 4 39 22-49 3 11	193 119-290 6 174 272 197-299 4 565 471-625 3 400			76 30-123 2

Table 15.--Macroelement composition of mollusks and products.

Common and Scientific Name	Description	Sodium mg	Potassium mg	Calcium mg	Phosphorus mg Per 100 grams	Chlorine mg	Sulfur mg	Magnesium mg
Topshell <i>Trochidae</i>	Whole							
	Raw			26	138			
				25-26	77-175			
				2	5			
	Dried			46	471			
Turban <i>Turbo cornutus</i>	Muscle							
	Raw			21	259			
				19-23	220-298			
				2	2			
	Canned		132	55	262			
Whelk <i>Eburna japonica</i>				15-95				
				2				
	Muscle			46	120			
	Raw							
	Canned							
Whelk, Common Northern <i>Buccinum undatum</i>	Seasoned	1350	68	50	136			
		1300-1400		47-52	130-142			
		2		2	2			
Whelk <i>Buccinum undatum</i>	Muscle							
	Raw		38	34	58			
Whelk, Common Northern <i>Buccinum undatum</i>	Muscle							
	Cooked							
	Boiled		211	165	277			414
Whelk Unspecified	Muscle							
	Cooked							
	Unspecified	265	316	54	227	585	448	160

1/ Average of the means obtained from the literature cited.

2/ Range of the means found in literature cited.

3/ Number of mean values, which were reported in the literature cited.

4/ Method of processing was not clearly described or the fish was identified only by common name.

Table 16.--Microelement (Group 1) composition of finfishes, whales, and products.

Common and Scientific Name	Description	Iron	Zinc	Fluorine	Arsenic	Iodine	Lead	Cadmium	Copper	Man- ganese	Mercury	Methyl- mercury
Alewife <u>Alosa pseudoharengus</u>	Muscle Raw										0.17 1/ 0.10-0.29 2/ 3-	0.05
	Smoked					0.26						
	Whole Raw				0.02			0.06	0.85			
	Fishmeal	620.00	100.00						18.00	20.00		
	FPC			162.00								
Alfoncino <u>Beryx splendens</u>	Muscle Raw	1.00										
Amberjack, King <u>Seriola dorsalis</u>	Muscle Raw		8.50			0.57			2.70			
Amberjack, Phillipine <u>Hynn timer</u>	Muscle Raw	7.15 1/ 7.00-7.30 2/ 2-										
Amberjack, Yellowtail <u>Seriola grandis</u>	Muscle Raw	10.00							0.10			
Amberjack, Yellowtail <u>Seriola lalandi</u>	Muscle Raw	6.70										
Amberjack, Yellowtail <u>Seriola quinqueradiata</u>	Muscle Raw	10.15 1/ 1.90-18.00 2/ 2-	0.95								0.38 1/ 0.36-0.40 2/ 2-	
	Canned	7.00										
Amberjack Carangidae	Muscle Raw	7.36 1.30-13.00 5	12.75 1/ 1.50-24.00 2/ 2-								0.50 0.44-0.56 2	0.44
	Canned											
	In Oil											
	Smoked	7.00										
	Unspecified	4/ 30.00										
	Salted & Dried	15.00										
Anchoveta <u>Engraulis ringens</u>	Whole Fishmeal	226.00	100.00						9.20	9.30		
Anchovy <u>Engraulis mystax</u>	Muscle Raw	15.20										
	Whole Fishmeal	258.50 111.36	354.00				1.45	0.71	9.00			
	FPC											
Anchovy, Ca'Moi <u>Coilia lindmani</u>	Muscle Raw	11.35										
Anchovy, European <u>Engraulis encrasicolus</u>	Muscle Raw	49.00	13.09 11.18-15.00 2				1.13	0.05	3.20 1/ 1.43-5.00 2/ 2-	0.70	0.16 0.04-0.04 5	
Anchovy, Longjaw <u>Stolephorus heterolobus</u>	Muscle Raw	11.00										
	Cooked											
	Boiled	35.00										

Table 16.--Microelement (Group 1) composition of finfishes, whales, and products.

Common and Scientific Name	Description	Iron	Zinc	Fluorine	Arsenic	Iodine	Lead	Cadmium	Copper	Man- ganese	Mercury	Methyl- mercury
Anchovy, Longjaw, Delis <u>Stolephorus commersonii</u>	Muscle											
	Raw	8.07										
	Dried	234.00										
	Salted & Dried	313.50										
	Powdered	278.15										
	Salted & Fermented	109.00										
Anchovy, Mandali <u>Coilia dussumieri</u>	Muscle											
	Raw	31.50										
	Salted & Dried	119.00										
Anchovy, Northern <u>Engraulis mordax</u>	Muscle											
	Raw										0.05 0.04-0.06 3	0.05
	Eviscerated & Beheaded Canned					0.43						
Anchovy, Whitebait <u>Stolephorus tri</u>	Muscle											
	Raw	148.26										
	Dried	518.91										
	Whole											
	Raw	38.70										
Anchovy Engraulidae	Muscle											
	Raw	15.30 12.00-20.00 3	8.80			0.76	0.14	0.25	0.58		0.01	
	Canned		17.71				0.87	2.77 ^{1/2} 0.16-5.39 ^{2/2}	0.81	0.10	0.15 0.04-0.21 3	0.09
	Cooked Boiled & Dried	91.00 40.00-180.00 3										
	Dried	116.50 30.00-203.00 2										
	Whole											
	Fishmeal	236.00 226.00-246.00 2	105.50 100.00-110.00 2						10.00 9.00-11.00 2	9.50 ^{1/2} 9.00-10.00 ^{2/2}		
	Muscle											
	Raw		7.80									
	Whole								4.20			
Raw												
Argentina, Atlantic <u>Argentina silus</u>	Muscle											
	Raw	5.75										
Barracuda <u>Sphyaena obtusata</u>	Muscle											
	Raw	1.10	2.10									
Barracuda <u>Sphraena schlegeli</u>	Muscle											
	Raw											

Table 16.--Microelement (Group 1) composition of finfishes, whales, and products.

Common and Scientific Name	Description	Iron	Zinc	Fluorine	Arsenic	Iodine	Lead	Cadmium	Copper	Man- ganese	Mercury	Methyl- mercury
Barracuda, Great <u>Sphyraena barracuda</u>	Muscle Raw	12.70										
Barracuda, Pacific <u>Sphyraena argentea</u>	Muscle Raw	8.00										
Barracuda, Striped, Torcillo <u>Sphyraena jello</u>	Muscle Raw	5.30										
Barracuda Sphyraenidae	Muscle Raw	8.33 2.00-15.00 3				0.29						
Bass, Sea <u>Diplectrum radiale</u>	Muscle Raw	9.50										
Bass, Sea <u>Paralabrax humeralis</u>	Muscle Raw	10.00										
Bass, Sea, Black <u>Centropristes striatus</u>	Muscle Raw		1.42		1.30			0.08	0.06		0.16	
Bass, Sea, Cherlo <u>Acanthistius pictus</u>	Muscle Raw	6.00							4.30			
Bass, Sea, Japanese <u>Lateolabrax japonicus</u>	Muscle Raw	20.00								5.05 0.10-10.0 2		
Bass, Sea, Kelp <u>Paralabrax clathratus</u>	Muscle Raw					0.12 ^{1/} 0.04-0.26 ^{2/} 3						
	Dried	41.25 32.00-46.00 4	13.00 0.90-26.00 4			1.45 ^{1/} 1.10-2.10 ^{2/} 4		3.00 2.00-4.00 4	2.75 2.00-5.00 4	0.52 0.50-0.60 4		
Bass, Sea, Murray Cod <u>Maccullochella macquariensis</u>	Muscle Raw	10.00							0.10			
Bass, Sea, Sand Perch <u>Diplectrum formosum</u>	Muscle Cooked Boiled					0.25						
Bass, Sea, White <u>Cynoscion nobilis</u>	Muscle Raw					0.38						
Bass, Sea Serranidae	Muscle Raw	18.29 1.90-63.70 7	2.69		0.19 ^{1/} 0.12-0.25 ^{2/} 2			0.05	1.50 0.61-2.10 3	0.30	0.56	
	Cooked Steamed	7.00										
Bass, Temperate, Rabaliza <u>Morone labrax</u>	Muscle Raw Dried	22.00			7.50							

Table 16.--Microelement (Group 1) composition of finfishes, whales, and products.

Common and Scientific Name	Description	Iron	Zinc	Fluorine	Arsenic	Iodine	Lead	Cadmium	Copper	Man- ganese	Mercury	Methyl- mercury
Bass, Temperate, Striped <u>Morone lineatus</u>	Muscle Raw					0.45						
Bass, Temperate, Striped <u>Morone punctata</u>	Muscle Raw											0.24
Bass, Temperate, Striped <u>Morone saxatilis</u>	Muscle Raw		2.70		0.40		0.82	0.02 0.01-0.02 2	0.56		1.01	
Bass, Temperate, White <u>Morone chrysops</u>	Muscle Raw						0.78 0.70-0.86 2	0.03			0.31 0.14-0.65 6	
Bass, Temperate, Yellow <u>Morone mississippiensis</u>	Muscle Raw										0.20	
Bass, Temperate Percichthyidae	Muscle Raw	4.20							2.10	0.26	0.52 0.20-0.80 4	
Batfish, Silvery <u>Psettes sebae</u>	Muscle Raw	11.00										
Big-Eye <u>Scombrop boops</u>	Muscle Raw	10.00										
Blacktail <u>Oblata melanura</u>	Muscle Raw		4.32				1.00		0.41		0.15	
Bleak <u>Alburnus lucida</u>	Muscle Raw					0.60						
Bleak Cyprinidae	Muscle Raw										0.41 0.30-0.51 2	
Bloater <u>Coregonus hoyi</u>	Muscle Cooked Grilled	22.00										
Bluefish <u>Pomatomus pedica</u>	Muscle Raw	10.00							1.00			
Bluefish <u>Pomatomus saltatrix</u>	Muscle Raw	52.00				0.35 0.26-0.43 2					0.24 0.20-0.29 2	
	Cooked Unspecified					0.38						
Bluefish Pomatomidae	Muscle Raw	6.53 6.00-7.06 2				0.25			2.30			

Table 16.--Microelement (Group 1) composition of finfishes, whales, and products.

Common and Scientific Name	Description	Iron	Zinc	Fluorine	Arsenic	Iodine	Lead	Cadmium	Copper	Man- ganese	Mercury	Methyl- mercury
Bombay Duck <u>Harpodon nehereus</u>	Muscle Raw Salted & Dried	12.90 105.00										
Bonito <u>Auxis bisus</u>	Muscle Raw										0.93	
Bonito, Atlantic <u>Sarda sarda</u>	Muscle Raw	59.33 45.00-73.00 3										
Bonito, Pacific <u>Sarda chiliensis</u>	Muscle Raw Cooked Roasted Salted & Dried	60.00 11.00 61.00										
Bonito, Striped <u>Sarda orientalis</u>	Muscle Raw	12.90										
Bonito Scombridae	Muscle Raw Cooked Roasted Salted & Dried	12.15 7.00-17.30 2 11.00 61.00										
Bowfin, Mudfish <u>Amia calva</u>	Muscle Raw					0.02	0.70	0.02			0.44	
Bream <u>Roughleyia australis</u>	Muscle Raw	10.00							0.03			
Bream, Black <u>Acanthopagrus butcheri</u>	Muscle Raw		7.80					0.05	0.25	0.50		
Bream, Bronze <u>Abramis brama</u>	Muscle Raw		95.60			1.20			4.30		0.24 0.13-0.35 2	
Bream, Gilthead <u>Chrysophrys aurata</u>	Muscle Raw										0.46 0.35-0.58 2	
Bream, Mud <u>Acanthopagrus berda</u>	Muscle Raw Dried	4.00 19.00										
Bream, Red <u>Beryx decadactylus</u>	Muscle Raw										0.08	
Bream, Sea, Black <u>Acanthopagrus schlegeli</u>	Muscle Raw										0.19	
Bream, Sea, Pagre <u>Pagrus pagrus</u>	Muscle Raw Cooked Unspecified				0.53	0.40 0.30						

Table 16.--Microelement (Group 1) composition of finfishes, whales, and products.

Common and Scientific Name	Description	Parts Per Million (PPM)										
		Iron	Zinc	Fluorine	Arsenic	Iodine	Lead	Cadmium	Copper	Manganese	Mercury	Methyl-mercury
Bream, Sea, Red <u>Chrysophrys major</u>	Muscle Raw	15.80 1.60-30.00 2	1.00									
Bream, Sea, Yellow <u>Talus tumifrons</u>	Muscle Raw	3.50	1.60									
Bream, White, Sargo <u>Diplodus sargus</u>	Muscle Raw		4.75 4.65-4.86 2				0.76 0.66-0.87 2	0.05	0.47 0.28-0.65 2		0.36 0.16-0.64 5	
Brill <u>Scophthalmus rhombus</u>	Muscle Raw		1.94				0.25	0.05	0.37		0.30	
Brill, Rough Scaled <u>Pseudorhombus oligodon</u>	Muscle Raw	5.13 5.00-5.25 2										
Brill Bothidae/Pleuronectidae	Muscle Raw Cooked Steamed									0.20		
Burbot <u>Lota lota</u>	Muscle Raw				0.80		1.40	0.01			0.27 0.08-0.44 8	
	Whole Fishmeal	235.00	100.00						12.00	14.00		
Butterfish, Black <u>Stromateus niger</u>	Muscle Raw	30.70 15.00-44.80 4						0.04	0.51		0.03	
Butterfish, Silver <u>Stromateus cinereus</u>	Muscle Raw Dried	55.77 36.40-122.30 6 260.00							14.00			
Butterfish Stromateidae	Muscle Raw Dried	9.00 96.00				0.06						
Butterflyfish, Ca Chix <u>Coradion altivelis</u>	Muscle Raw	4.60										
Butterflyfish Chaetodontidae	Muscle Raw	10.90 10.80-11.00 2										
Caesio, Golden <u>Caesio chrysozonus</u>	Muscle Raw Dried	6.45 6.00-6.90 2 10.00										
Caesio, Golden <u>Caesio cuning</u>	Muscle Raw	5.10										

Table 16.--Microelement (Group 1) composition of finfishes, whales, and products.

Common and Scientific Name	Description	Iron	Zinc	Fluorine	Arsenic	Iodine	Lead	Cadmium	Copper	Man- ganese	Mercury	Methyl- mercury
Capelin <u>Mallotus villosus</u>	Muscle											
	Raw											0.02
	Whole											
	Raw			3.55								0.03
	Fishmeal	303.76 48.00-575.00 3	108.46 53.00-142.00 4		6.70 2.50-10.90 2	0.05 1.73-43.50 3	19.57 0.13-0.34 3	0.23 2.90-12.00 4	6.03 5.80 0.42 0.08-0.15 4			
	FPC			56.70								
Carp <u>Chela bacila</u>	Muscle											
	Raw	1.96							0.51			
Carp <u>Cyprinus carpio</u>	Muscle					0.07					0.27	
	Raw	12.82 7.30-21.00 4				0.01-0.21 4					0.11-0.50 4	
	Whole				0.41						0.35	
	Raw											
	Eviscerated & Beheaded						1.00	0.01				
	Raw											
Carp, Bata <u>Labeo bata</u>	Muscle									1.70		
	Raw											
Carp, Chevenne <u>Leuciscus cephalus</u>	Muscle					0.07					0.36	
	Raw											
Carp, Crucian <u>Cyprinus carassius</u>	Muscle											
	Raw	22.00 17.00-29.00 3	10.00						3.00			
	Canned	300.00										
Carp, Ghania <u>Labeo gonius</u>	Muscle									1.40		
	Raw	21.00										
	Dried	118.00										
Carp, Indian <u>Labeo rohita</u>	Muscle										0.45	
	Raw	13.18 4.99-38.00 5							3.67 1.25-6.10 2			
Carp, Indian, Puti <u>Barbus punitus sophore</u>	Eviscerated & Beheaded											
	Raw	9.80 9.60-10.00 2							3.20			
	Smoked	130.00							8.00			
Carp, Indian, Puti <u>Barbus sarana</u>	Muscle											
	Raw								0.77			
	Dried	280.00							16.00			
Carp, Katla <u>Catla catla</u>	Muscle					1.48						
	Raw	19.23 7.10-43.00 3							3.31 1.22-5.40 2	0.46		
	Eviscerated & Beheaded											
	Dried	110.00							8.00			

Table 16.--Microelement (Group 1) composition of finfishes, whales, and products.

Common and Scientific Name	Description	Iron	Zinc	Fluorine	Arsenic	Iodine	Lead	Cadmium	Copper	Man- ganese	Mercury	Methyl- mercury
Carp, Mahasole <u>Barbus tor</u>	Muscle Raw	38.30							1.22			
Carp, Mrigala <u>Cirrhina mrigala</u>	Muscle Raw	7.86 5.38-10.90 3							1.21	0.38		
Carp, Orange Fin <u>Labeo calbasu</u>	Muscle Raw	18.12 8.30-28.05 3							2.80	0.44		
	Eviscerated & Beheaded Dried	155.00 130.00-180.00 2							11.00 10.00-12.00 2			
Carp, Reba <u>Cirrhina reba</u>	Muscle Raw	55.73										
Carp, Silver <u>Hypophthalmichthys molitrix</u>	Muscle Raw	11.00	3.50									
Carp, Tribolodon <u>Tribolodon haronensis</u>	Muscle Raw	14.00										
Carp Cyprinidae	Muscle Raw	12.46 4.40-20.00 6	46.95 17.60-76.30 2		0.12			0.01			0.44 0.20-0.93 6	1.25
	Whole Raw				0.34							
Catfish, Airbreathing <u>Clarias fuscus</u>	Muscle Raw	4.85										
Catfish, Airbreathing, Hito <u>Clarias batrachus</u>	Muscle Raw	6.04 2.00-8.72 3	10.93				0.05	0.03	1.24 0.99-1.48 2		0.04	
Catfish, Airbreathing, Karmouth <u>Clarias lazariae</u>	Muscle Raw	19.00										
Catfish, Fresh Water, Bacha <u>Eutropiichthys vacha</u>	Muscle Raw Dried	11.00 112.00							13.00			
Catfish, Fresh Water, Bullhead, Black <u>Ictalurus melas</u>	Muscle Raw				0.18	0.01						
Catfish, Fresh Water, Bullhead, Blue <u>Ictalurus furcatus</u>	Muscle Raw										0.26	0.21
Catfish, Fresh Water, Bullhead, Brown <u>Ictalurus nebulosus</u>	Muscle Raw							0.04			0.14	0.45
Catfish, Fresh Water, Bullhead, Yellow <u>Ictalurus natalis</u>	Muscle Raw										0.11 0.06-0.16 2	

Table 16.--Microelement (Group 1) composition of finfishes, whales, and products.

Common and Scientific Name	Description	Iron	Zinc	Fluorine	Arsenic	Iodine	Lead	Cadmium	Copper	Man- ganese	Mercury	Methyl- mercury
Catfish, Fresh Water, Channel <u>Ictalurus punctata</u>	Muscle Raw		8.30		1.14 0.10-2.18 2	0.01	0.63 0.39-0.68 2	0.04 0.01-0.08 4			0.36 0.09-1.05 6	0.23 ^{1/} 0.04-0.42 ^{2/} 22
Catfish, Fresh Water, Mulley <u>Wallagonia attu</u>	Muscle Raw	16.61 6.30-26.92 2							0.82			
Catfish, Fresh Water, Pangash <u>Pangasius pangasius</u>	Muscle Raw	5.40					0.01	0.01	0.60 0.40-0.80 2		0.08	
Catfish, Fresh Water, Shengti <u>Macrones gluilo</u>	Eviscerated & Beheaded Dried Salted & Dried	220.00 41.85							25.00			
Catfish, Fresh Water Ictaluridae	Muscle Raw	15.80 3.60-28.00 2			0.17	0.42	0.84 0.50-1.10 11	0.09	1.15 0.60-1.70 2	0.60	0.62 0.13-1.21 9	1.05
Catfish, Sea <u>Arius arius</u>	Muscle Raw	4.77							0.64			
Catfish, Sea <u>Arius leiotocephalus</u>	Muscle Raw	23.60										
Catfish, Sea <u>Bagre macracanthus</u>	Muscle Raw	6.25										
Catfish, Sea, Hardhead <u>Arius felis</u>	Muscle Raw Cooked Boiled					0.20 0.18						
Catfish, Sea, Manila <u>Arius manillensis</u>	Muscle Raw Dried & Salted Dried	11.20 42.00 63.70										
Catfish, Sea, Shingal <u>Arius dussumieri</u>	Muscle Raw	49.23 18.00-91.60 3										
Catfish, Sea Ariidae	Muscle Raw Cooked Fried Battered & Breaded Steamed Dried Salted & Dried	9.33 4.32-12.00 4 23.00 6.00 61.00 64.00	5.15 2.90-8.10 3		0.24	0.04		0.02	0.23 0.17-0.29 2	0.52	0.61 0.05-0.72 2	

Table 16.--Microelement (Group 1) composition of finfishes, whales, and products.

Common and Scientific Name	Description	Parts Per Million (PPM)										
		Iron	Zinc	Fluorine	Arsenic	Iodine	Lead	Cadmium	Copper	Manganese	Mercury	Methylmercury
	Whole											
	Raw		149.00									
	Dried	36.00										
Catfish, Stinging	Muscle											
<u>Saccobranhus fossilis</u>	Raw	31.00							3.65 1.55-5.80 2			
Cavefish	Muscle											
<u>Amblyopsis godomola</u>	Raw	7.09 5.18-9.00 2										
Char, Arctic	Muscle											
<u>Salvelinus alpinus</u>	Raw										0.12	
Characin	Muscle											
<u>Prochilodus laticeps</u>	Raw	14.70										
Chimaera, Elephant Shark	Muscle											
<u>Callorhynchus milii</u>	Raw	23.00	5.00	3.49 2.38-4.61 2				0.05	0.40	0.50		
Chimaera	Muscle											
Chimaeridae	Raw				10.30							
Chub, Sea, Blackfish	Muscle											
<u>Girella tricuspidata</u>	Raw	10.00							0.03			
Chub, Sea	Muscle											
Kyphosidae	Raw										0.19	0.13
Cichlid	Muscle											
Cichlidae	Raw	32.00										
	Dried	104.00										
Cisco, Bering	Muscle											
<u>Coregonus lavaretus</u>	Raw											0.08
Cisco, Lake	Muscle											
<u>Coregonus artedii</u>	Raw					0.25 0.24-0.27 2					0.21 0.12-0.30 2	0.66
	Whole											
	Fishmeal	185.00	100.00						14.00			
	Eviscerated & Beheaded											
	Raw						0.96	0.01				
Cisco	Muscle											
Salmonidae	Raw										0.19	
	Eviscerated											
	Smoked					0.24						
Cod, Atlantic	Muscle											
<u>Gadus morhua</u>	Raw	17.50 5.00-30.00 2	5.89 3.27-8.50 2	2.15 0.80-3.50 2		0.41 0.21-0.79 3	0.25 0.20-0.34 4	0.03 0.01-0.05 4	0.55 0.29-0.80 3	0.11 0.10-0.12 2	0.23 0.02-1.06 13	0.03

Table 16.--Microelement (Group 1) composition of finfishes, whales, and products.

Common and Scientific Name	Description	Iron	Zinc	Fluorine	Arsenic	Iodine	Lead	Cadmium	Copper	Manganese	Mercury	Methylmercury
Parts Per Million (PPM)												
	Cooked											
	Fried											
	Battered											
	& Breaded	6.00										
	Steamed	10.00										
	Salted					0.90					0.05	
						0.60-1.20					0.04-0.07	
						2					2	
	Offal											
	Presscake				2.20							
Cod, Pacific	Muscle											
<u>Gadus macrocephalus</u>	Raw					0.25					0.03	
Cod, Rock	Muscle											
<u>Physiculus barbatus</u>	Raw		5.00					0.05	0.80	0.50		
Cod, Rock	Muscle											
<u>Roborolga jacksoniensis</u>	Raw								0.10			
Cod	Muscle											
Gadidae	Raw	4.78 0.20-10.00 15	10.52 0.74-52.50 7	4.96 1/ 2.50-7.00 3 3/4	0.40 0.30-0.60 5	0.71 0.24-1.41 6		0.08 0.01-0.26 4	2.48 0.22-5.50 8	0.28 0.02-0.71 9	0.21 0.05-0.90 12	0.14 0.00-0.42 3
	Canned						0.33 0.31-0.34 4				0.22	
	Packed In											
	Brine										0.09	
	Cooked											
	Unspecified	9.00				0.66			1.25 0.80-1.70 2			
	Dried	37.65 26.10-52.51 4	33.82			7.23 0.71-10.87 3				5.34	10.68	
	Dried & Soaked					1.31						
	Salted	13.50 3.00-26.10 4		5.00		0.93						
	Salted & Dried	28.00		7.00		3.82			1.00			
	Salted, Dried and Soaked	28.00				2.22						
	Smoked					1.63						
	FPC			13.06 2.52-23.60 2							0.09	
	Whole											
	Dried	46.00										
	FPC				148.30 57.00-196.30 2							
	Offal											
	Fishmeal					11.33 10.59-12.08 2						
Combtooth, Tompot, Blenny	Muscle											
<u>Blennius gattoruggine</u>	Raw										0.13	

Table 16.--Microelement (Group 1) composition of finfishes, whales, and products.

Common and Scientific Name	Description	Parts Per Million (PPM)									
		Iron	Zinc	Fluorine	Arsenic	Iodine	Lead	Cadmium	Copper	Manganese	Mercury
Coral Cod <u>Cephalopholis miniatus</u>	Muscle Raw	9.00									
Coral Cod, Sea Bass <u>Plectropomus maculatus</u>	Muscle Raw	10.00							0.02		
Coralfish, Goat Bream <u>Sargus annularis</u>	Muscle Raw										0.18 0.11-0.26 3
Crevalle <u>Caranx diedaba</u>	Muscle Dried	14.00									
Crevalle, Jack <u>Caranx carangus</u>	Muscle Raw	8.00									
Croaker <u>Otolithus brachygnathus</u>	Muscle Raw	1.00									
Croaker <u>Sciaena coitor</u>	Muscle Raw								0.53		
Croaker <u>Sciaena deliciosa</u>	Muscle Raw	16.63 15.40-19.00 3									0.20
	Salted & Dried	57.00									
Croaker <u>Sciaena schlegeli</u>	Muscle Raw					0.12					
Croaker, Atlantic <u>Micropogon undulatus</u>	Muscle Raw				0.57						
	Whole Raw	5.40	39.40							52.90	
Croaker, Nibe <u>Nibea mitsukurii</u>	Muscle Raw	1.40	1.10								
Croaker, Nibe <u>Nibea nibe</u>	Muscle Raw	1.10	1.10								
Croaker, Robalo <u>Sciaena starksei</u>	Muscle Raw	64.00									
Croaker, Roncador <u>Ophioscion venezuelae</u>	Muscle Raw	15.50									
Croaker, Smooth Scaled <u>Pseudosciaena anea</u>	Muscle Raw Dried Salted & Dried	3.90 20.00 19.70									
Croaker, Smooth Scaled <u>Sciaena dussumieri</u>	Muscle Raw	8.90									
Croaker, Verrugato <u>Sciaena ranchus</u>	Muscle Raw										0.17 0.14-0.19 3

Table 16.--Microelement (Group 1) composition of finfishes, whales, and products.

Common and Scientific Name	Description	Parts Per Million (PPM)										
		Iron	Zinc	Fluorine	Arsenic	Iodine	Lead	Cadmium	Copper	Man- ganese	Mercury	Methyl- mercury
Croaker, Verrugato, Corb <u>Sciaena cirrosa</u>	Muscle Raw										0.09	
Croaker, Yellow <u>Pseudosciaena manchuria</u>	Muscle Raw	0.80	0.70									
Croaker Sciaenidae	Muscle Raw	15.80 7.00-20.00 4										
	Canned In Oil, Drained	38.00										
	Salted & Dried	43.00										
	Whole Raw								1.25			
Cusk <u>Brosme brosme</u>	Muscle Raw	3.50	8.00			1.84 0.17-3.50 2	0.20	0.01	1.00		0.09 0.05-0.14 5	
Cusk-Eel <u>Lepophidium brevibarbe</u>	Muscle Raw	9.40										
Cusk-Eel, Bearded Ophidium <u>Ophiodon barbatum</u>	Muscle Raw	5.00	6.00						1.00			
Cusk-Eel, Congrio Colorado <u>Genypterus chiliensis</u>	Muscle Raw	11.80		2.47	0.60		0.20		1.40			
Cusk-Eel, Congrio, Negro <u>Genypterus maculatus</u>	Muscle Raw	3.49		2.26					1.44			
Cusk-Eel, Kingklip <u>Genypterus capensis</u>	Muscle Dried				8.70							
Cusk-Eel, Ling <u>Genypterus blacodes</u>	Muscle Raw	11.90										
Cutlassfish <u>Lepidopus caudatus</u>	Muscle Raw										0.20	
Cutlassfish <u>Trichiurus lepturus</u>	Muscle Raw	1.40	3.30 1.60-5.00 2						1.00			
Cutlassfish <u>Trichiurus savala</u>	Muscle Raw	65.03 14.40-138.70 3										
Cutlassfish, Hairtail <u>Trichiurus chinensis</u>	Muscle Raw					0.08						
Cutlassfish, Ribbonfish <u>Trichiurus haumela</u>	Muscle Raw	6.40							2.30			
	Dried	230.00							16.00			
Cutlassfish Trichiuridae	Muscle Raw	13.67 6.00-24.00 3										

Table 16.--Microelement (Group 1) composition of finfishes, whales, and products.

Common and Scientific Name	Description	Iron	Zinc	Fluorine	Arsenic	Iodine	Lead	Cadmium	Copper	Man- ganese	Mercury	Methyl- mercury
Cyclothone	Muscle											
Gonostomatidae	Raw										0.04	
											0.03-0.05	
											2	
Dab	Muscle											
<u>Limanda limanda</u>	Raw	2.84	9.42				0.27	0.01	1.89		0.49	
		2.50-3.17	7.33-11.50				0.23-0.30		0.77-3.00		0.04-1.10	
		2	2				2		2		5	
Dab, Japanese	Muscle											
<u>Limanda yokohama</u>	Raw	1.20	1.10									
Dab	Muscle											
Pleuronectidae	Raw	6.90									0.14	
											0.06-0.22	
											3	
	Cooked											
	Fried											
	Battered &											
	Breaded	10.00							0.70			
	Eviscerated &											
	Beheaded											
	Raw	4.00	3.11						0.25	0.32		
Dace, Fallfish	Whole											
<u>Semotilus corporalis</u>	Raw											0.80
Dace, Horned	Whole											
<u>Semotilus atromaculatus</u>	Raw				0.47							0.28
Dace, Rosyside	Muscle											
<u>Clinostomus funduloides</u>	Raw										0.04	0.03
Dace	Muscle											
Cyprinidae	Raw										0.51	0.41
Dogfish	Muscle											
<u>Acanthias vulgaris</u>	Raw					2.61						
Dogfish, Black	Muscle											
<u>Centroscyllium fabricii</u>	Raw										0.60	
Dogfish, Smooth	Muscle											
<u>Mustelus canis</u>	Raw	8.40										
Dogfish, Spiny	Muscle											
<u>Squalus acanthias</u>	Raw		5.20		2.64			0.17	0.99		0.77	0.05
					0.60-3.00						0.48-1.17	
					3						5	
Dogfish, White	Muscle											
<u>Mustelus dorsalis</u>	Dried											
	Smoked	15.40										
Dogfish	Muscle											
Squalidae	Raw	12.50	8.19	5.26	3.00			0.19	0.70	0.50	0.62	
		10.00-15.00	4.90-11.50					0.05-0.32			0.26-1.08	
		2	2					2			5	
	Cooked											
	Fried	13.00										
	Whole											
	FPC			761.00								

Table 16.--Microelement (Group 1) composition of finfishes, whales, and products.

Common and Scientific Name	Description	Iron	Zinc	Fluorine	Arsenic	Iodine	Lead	Cadmium	Copper	Man- ganese	Mercury	Methyl- mercury
Dolphin, Dorado <u>Aurata aurata</u>	Muscle Raw	9.00										
Dolphin, Mai Mai, Dorado <u>Coryphaena hippurus</u>	Muscle Raw	17.00				0.24					0.40 0.08-0.86 3	0.25
	Cooked Unspecified					0.20						
Dolphin Coryphaenidae	Muscle Raw										1.10	1.33
Dory, John <u>Zeus faber</u>	Muscle Raw										0.18 0.10-0.27 3	
Dory, John <u>Zeus japonicus</u>	Muscle Raw	10.00							0.20			
Dory Zeidae	Muscle Cooked Dried	6.00			0.10							
Drepane <u>Drepane africana</u>	Muscle Raw	4.00										
Drepane, Concertinafish <u>Drepane punctata</u>	Muscle Raw	5.00 4.00-7.00 3										
Drum <u>Sciaena regiae</u>	Muscle Raw	5.00									0.26	
Drum, Corvina <u>Sciaena gilberti</u>	Muscle Raw	11.00 9.00-13.00 2										
Drum, Dhoma <u>Sciaena glauca</u>	Muscle Raw	42.30										
Drum, Fresh Water <u>Aplodinotus grunniens</u>	Muscle Raw					0.01 0.75-0.80 2	0.78	0.03			0.56 0.19-1.70 5	
	Whole Fishmeal	430.00	100.00						49.00	14.00		
Drum, Ghol <u>Sciaena miles</u>	Muscle Raw	21.00										
Drum, Popa <u>Sciaenoides pama</u>	Whole Dried	150.00							13.00			
Drum, Teraglin <u>Cynoscion atelodus</u>	Muscle Raw	10.00							10.00			
Drum Sciaenidae	Muscle Raw	10.50 10.00-11.00 2	7.00 6.40-7.59 2		8.86						0.47	

Table 16.--Microelement (Group 1) composition of finfishes, whales, and products.

Common and Scientific Name	Description	Iron	Zinc	Fluorine	Arsenic	Iodine	Lead	Cadmium	Copper	Man- ganese	Mercury	Methyl- mercury
	Whole Raw								2.70			
Eel, Conger <u>Conger conger</u>	Muscle Raw	9.00	19.60					0.30	9.00	0.25	0.43 0.15-0.70 2	
Eel, Conger <u>Conger myriaster</u>	Muscle Raw	40.00						0.03				
Eel, Conger Congridae	Muscle Raw	14.22 5.00-40.00 5	8.84 8.67-9.00 2		0.21			0.06	2.01 0.01-6.00 5	0.27	0.29 0.14-0.25 3	
	Cooked Fried Battered & Breaded Steamed	10.00 23.00										
Eel, Fresh Water, American <u>Anguilla rostrata</u>	Muscle Raw		6.15		0.25	0.80		0.03	0.20		0.59 0.36-0.80 7	0.31 0.11-0.50 5
Eel, Fresh Water, European <u>Anguilla anguilla</u>	Muscle Raw	17.00 10.00-24.00 2	30.00			0.10					0.56 0.06-3.07 11	
Eel, Fresh Water, Japanese <u>Anguilla japonica</u>	Muscle Raw	14.00								0.30		
	Cooked Broiled	10.00										
Eel, Fresh Water Anguillidae	Muscle Raw	27.30 4.80-54.40 4	30.00		0.60	0.80			1.27 0.83-1.70 2	0.30	0.26 0.23-0.28 3	
	Canned In Dill Sauce In Oil Jellied Cooked Broiled Jellied					0.65 0.61-0.70 2					0.24 0.22 0.15	
Eel, Pike Conger <u>Muraenesox telabonoides</u>	Muscle Raw	42.40										
Eel, Pike Conger, Silver <u>Muraenesox cinereus</u>	Muscle Raw	3.73 0.80-6.65 2	0.60									
Eel, Pike Conger Muraenesocidae	Muscle Raw	14.00 8.00-20.00 2							0.30			
	Cooked Stewed	10.00										

Table 16.--Microelement (Group 1) composition of finfishes, whales, and products.

Common and Scientific Name	Description	Parts Per Million (PPM)										
		Iron	Zinc	Fluorine	Arsenic	Iodine	Lead	Cadmium	Copper	Manganese	Mercury	Methylmercury
Eel, Snake, Murrel <u>Ophicephalus marulius</u>	Muscle Raw Dried	25.00 84.00							3.80 8.00			
Eel, Snake, Murrel <u>Ophicephalus punctatus</u>	Muscle Raw	37.83 13.00-72.53 4							4.80			
Eel, Snake, Murrel <u>Ophicephalus striatus</u>	Muscle Raw	13.46 2.90-41.00 6	6.40				0.01	0.02	2.45 0.43-5.80 3		0.30	
Eel, Snake, Pale Spotted <u>Ophichthus ocellatus</u>	Muscle Raw		5.68		0.22			0.07		0.59		0.28
Eel, Snake Ophichthidae	Muscle Raw	6.57	14.62						0.30	0.16		
Eel, Spiny <u>Mastacembelus favus</u>	Muscle Raw	4.30										
Eel, Swamp <u>Fluta alba</u>	Muscle Raw		13.30					0.01	0.39			
Eel, Swamp, Palos <u>Synbranchus bengalensis</u>	Muscle Raw	33.00										
Eel, Swamp Flutidae	Muscle Raw	22.00										
Eelpout, Ocean Pout <u>Macrozoarces americanus</u>	Whole FPC			58.00								
Eelpout Zoarcidae	Muscle Raw	9.40							2.40	0.24		
Emperor <u>Lethrinus opercularis</u>	Muscle Raw	4.00										
Featherback <u>Notopterus notopterus</u>	Muscle Raw	16.90										
Featherback, Chitala <u>Notopterus chitala</u>	Muscle Raw	15.33 4.20-29.80 3							1.65	0.50		
Filefish <u>Navodon modestus</u>	Muscle Raw	1.10	1.50									
Flathead, Deep Sea <u>Platycephalus macrodon</u>	Muscle Raw	10.00							0.03			
Flathead, Indian <u>Platycephalus indicus</u>	Muscle Raw	6.70 1.20-13.00 3	1.30							0.40		
Flathead, Sand <u>Platycephalus bassensis</u>	Muscle Raw		10.80					0.05	0.60	0.50		

Table 16.--Microelement (Group 1) composition of finfishes, whales, and products.

Common and Scientific Name	Description	Iron	Zinc	Fluorine	Arsenic	Iodine	Lead	Cadmium	Copper	Man- ganese	Mercury	Methyl- mercury
Flathead, Tira Tira <u>Percophis brasiliensis</u>	Muscle											
	Raw					0.24						
	Cooked											
	Unspecified					0.23						
Flathead	Muscle											
Percophidae	Raw	20.00										
Flounder	Muscle											
<u>Cleisthenes pinetorium</u>	Raw	4.20	0.80							0.40		
<u>herzensteini</u>		0.40-8.00										
		2										
Flounder	Muscle											
<u>Cynoglossus senegalensis</u>	Raw	4.00										
Flounder	Muscle											
<u>Lepidorhombus boscii</u>	Raw	11.00										
	Dried				33.40							
Flounder	Muscle											
<u>Paralichthys brasiliensis</u>	Raw					0.15						
	Cooked											
	Boiled					0.15						
Flounder	Muscle											
<u>Pleuronectes arsius</u>	Raw	10.00						0.10				
Flounder, Spotted	Muscle											
<u>Citharus linguatula</u>	Raw										1.82	
Flounder, Starry	Muscle											
<u>Platichthys stellatus</u>	Raw					0.21	0.05				0.08	
						0.18-0.23						
						3						
Flounder, Starry, Hirame	Muscle											
<u>Paralichthys olivaceus</u>	Raw											0.04
												0.01-0.07
												2
Flounder, Stone	Muscle											
<u>Kareius bicoloratus</u>	Raw	0.90	2.10									
Flounder, Winter	Muscle											
<u>Pseudopleuronectes americanus</u>	Raw					0.36					0.14	0.01
						0.18-0.53					0.09-0.17	
						3					3	
Flounder, Witch	Muscle											
<u>Glyptocephalus cynoglossus</u>	Raw											0.04
	Cooked											
	Fried											
	Battered &											
	Breaded	8.00										
	Steamed	9.00										
	Eviscerated &											
	Beheaded											
	Raw	3.15	2.72						0.31	0.37		

Table 16.--Microelement (Group 1) composition of finfishes, whales, and products.

Common and Scientific Name	Description	Parts Per Million (PPM)										
		Iron	Zinc	Fluorine	Arsenic	Iodine	Lead	Cadmium	Copper	Manganese	Mercury	Methyl-mercury
Flounder, Yellowtail <u>Limanda ferruginea</u>	Muscle Raw				4.51		0.53	0.03			0.07	0.03
Flounder Bothidae/Pleuronectidae	Muscle Raw	8.56 4.61-22.00 11	4.78 4.86-14.25 4		0.63 0.08-1.80 3	0.30 0.29-0.30 2		0.62 0.05-1.18 2	1.58 0.48-2.80 9	0.44 0.18-0.90 5	0.34 0.12-0.69 4	
	Canned Cooked Fried					0.62						
	Battered & Breaded	11.00										
	Unspecified	13.00										
	Smoked					0.37						
	Whole Raw								2.35			
Fluke <u>Pleuronectes flesus</u>	Muscle Raw	8.00	16.00					2.20				0.65 0.42-0.80 3
Flyingfish <u>Cypselurus opisthopus</u>	Muscle Raw									0.13		
Flyingfish, Small Scaled <u>Cypselurus oligolepis</u>	Muscle Raw	5.10										
Flyingfish, Volador <u>Todaropsis eblanas</u>	Muscle Raw										0.26	
Gar, Longnose <u>Lepisosteus osseus</u>	Muscle Raw		5.00			0.01		1.00			0.22 0.15-0.34 3	
	Eviscerated & Beheaded Raw				0.30							
Garfish <u>Tylosurus giganteus</u>	Muscle Raw	9.80										
Garfish, Foli <u>Belone belone</u>	Muscle Raw					1.87						
	Cooked Boiled					1.78						
	Fried					2.24						
Garfish, Houndfish <u>Tylosurus crocodilus</u>	Muscle Raw	10.00										
Giant Perch <u>Lates calcarifer</u>	Muscle Raw	12.74 4.00-41.00 7						0.63 0.20-1.06 2				
Goatfish, Ca'Phen <u>Parupeneus indicus</u>	Muscle Raw	5.05								0.00		
Goatfish, Red <u>Mulloidichthys auriflamma</u>	Muscle Raw										0.05	0.05

Table 16.--Microelement (Group 1) composition of finfishes, whales, and products.

Common and Scientific Name	Description	Parts Per Million (PPM)										
		Iron	Zinc	Fluorine	Arsenic	Iodine	Lead	Cadmium	Copper	Manganese	Mercury	Methyl-mercury
Goatfish, Red Mullet <u>Mullus barbatus</u>	Muscle Raw	35.50 11.00-60.00 2	5.04 3.96-6.11 2				0.74 0.55-0.93 2	0.06	0.67 0.66-0.67 2		0.44 0.10-0.79 3	
Goatfish, Red Mullet <u>Mullus surmulletus</u>	Muscle Raw		5.00				0.68	0.05	0.62		0.23 0.10-0.36 2	
Goatfish, Yellow <u>Upeneoides sulphureus</u>	Muscle Raw	9.10										
Goatfish Mullidae	Muscle Raw	10.00									0.11	
Goby <u>Amigdola decussata</u>	Muscle Raw										0.33	
Goby, Banner <u>Microgobius microlepis</u>	Whole Raw	25.00										
Goby, Black <u>Gobius niger</u>	Muscle Raw		4.27				0.66	0.08	0.50		0.46	
Goby, Flathead <u>Glossogobius giuris</u>	Muscle Raw	5.23 3.00-9.50 3							0.31	0.00		
Goby, Gudgeon <u>Gobio fluviatilis</u>	Muscle Raw					0.12						
Goby, Gudgeon <u>Gobius paganellus</u>	Muscle Raw										1.46 0.15-2.77 2	
Goby, Longtail <u>Gobionellus longicaudus</u>	Muscle Raw	24.90										
Goby, Mudskipper <u>Boleophthalmus dussumieri</u>	Muscle Raw	82.40										
Goby, Round <u>Neogobius melanostomus</u>	Muscle Raw	18.00										
Goby, Sea Trout, Merluzza <u>Macrodon ancylodon</u>	Muscle Raw	16.05 10.90-21.20 2										
Goby Gobiidae	Muscle Raw	15.00 10.00-20.00 2	6.00						4.00			
	Salted & Fermented	14.00										
Goldfish, Funa <u>Carassius auratus</u>	Whole Raw	56.00	60.00				2.30	0.14	2.20	2.30	0.15 0.05-0.28 4	0.06

Table 16.--Microelement (Group 1) composition of finfishes, whales, and products.

Common and Scientific Name	Description	Iron	Zinc	Fluorine	Arsenic	Iodine	Lead	Cadmium	Copper	Manganese	Mercury	Methylmercury
Goosefish, Monkfish <u>Lophius americanus</u>	Muscle Raw											0.05
Goosefish, Monkfish <u>Lophius budegassa</u>	Muscle Raw	15.00										
Goosefish, Monkfish <u>Lophius piscatorius</u>	Muscle Raw		4.15				0.88		0.14		0.49 0.10-1.27 6	
Goosefish, Monkfish <u>Lophius setigerus</u>	Muscle Raw	10.00										
Goosefish, Monkfish Lophiidae	Muscle Raw Cooked Fried Battered & Breaded Parboiled Steamed	10.00 12.00 10.00 5.00										
Greenling <u>Pleurogrammus azonus</u>	Muscle Raw											0.04
Greenling, Atka Mackerel <u>Pleurogrammus monopterygius</u>	Muscle Raw	10.00										
Greenling <u>Hexagrammidae</u>	Muscle Raw				0.44 0.40-0.48 2							
Grenadier, New Zealand Whiptail <u>Macrourus novaezelandia</u>	Muscle Raw		19.40					0.05	1.70	0.80		
Grenadier, Rattail <u>Goryphaenoides acrolepis</u>	Muscle Raw										0.36	
Grenadier, Rock <u>Macrourus rupestris</u>	Muscle											0.05
Grenadier Macrouridae	Muscle Raw	9.00					/		4.00		0.46 0.03-1.14 3	
Grouper <u>Epinephelus ergastularius</u>	Muscle Raw	10.00							0.10	0.30		
Grouper, Merou <u>Epinephelus goreensis</u>	Muscle Raw				0.01							
Grouper, Red <u>Epinephelus morio</u>	Muscle Raw					0.40						
Grouper, Snowy <u>Epinephelus niveatus</u>	Muscle Raw Cooked Boiled					0.22						
Grouper, Spotted <u>Epinephelus corallicola</u>	Muscle Raw Dried	6.90 5.80-8.00 2 11.00										

Table 16.--Microelement (Group 1) composition of finfishes, whales, and products.

Common and Scientific Name	Description	Iron	Zinc	Fluorine	Arsenic	Iodine	Lead	Cadmium	Copper	Man- ganese	Mercury	Methyl- mercury
Grouper, Spotted Cabrilla <u>Epinephelus analogus</u>	Muscle Raw			0.21								
Grouper, Yellowbelly <u>Epinephelus gigas</u>	Muscle Raw	10.50										
Grouper Serranidae	Muscle Raw	15.60				0.07						
Grun <u>Anisotremus scapularis</u>	Muscle Raw	9.82 7.63-12.00 2										
	Cooked											
	Baked	10.00										
	Dried	28.70										
Grun <u>Parapristipoma trilineatum</u>	Muscle Raw	10.00										0.01
Grun <u>Pristipoma incisus</u>	Muscle Raw										0.31	
Grun <u>Pristipoma jubelini</u>	Muscle Raw	10.00										
Grun, Besugo, Bangkoknok <u>Pomadasys argyreus</u>	Muscle Raw	22.50										
Grun, Bluestriped <u>Haemulon sciurus</u>	Muscle Raw	13.00										
Grun, Dorade <u>Parapristipoma mediterraneum</u>	Muscle Raw	14.00										
Grun, Meagre <u>Pomadasys operculare</u>	Muscle Raw	1.00										
Grun, Trumpeter <u>Pelatis sexlineatus</u>	Muscle Raw	10.00							0.10			
Grun Pomadasyidae	Muscle Raw	12.00 10.00-14.00 2										
Guitarfish <u>Rhinobatus polyapththalmus</u>	Muscle Raw	2.60	1.00									
Guitarfish, Atlantic <u>Rhinobatus lentiginosus</u>	Muscle Raw		3.03		3.03			0.11	0.60		0.33	
Guitarfish, Fiddlefish <u>Rhinobatus hynnicephalus</u>	Muscle Raw	16.00										
Guitarfish, Guitarra <u>Rhinobatus planiceps</u>	Muscle Washed With Salt & Dried	63.74										
Gurnard <u>Cheilodactylus macropterus</u>	Muscle Raw	38.33 10.00-83.00 3	63.00						1.40 0.10-2.40 3	1.10 0.60-1.60 2		

Table 16.--Microelement (Group 1) composition of finfishes, whales, and products.

Common and Scientific Name	Description	Parts Per Million (PPM)										
		Iron	Zinc	Fluorine	Arsenic	Iodine	Lead	Cadmium	Copper	Manganese	Mercury	Methyl-mercury
Gurnard, Flying <u>Dactylopagrus carponemus</u>	Muscle Raw							0.05	0.30	0.50		
Gurnard, Flying <u>Dactylopteridae</u>	Muscle Raw	11.00										
Gurnard, Red <u>Chelidonichthys kumu</u>	Muscle Raw	18.00										
Haddock <u>Melanogrammus aeglefinnus</u>	Muscle Raw	6.79 3.50-14.00 15	7.88 2.76-17.40 4	5.06 5.06-5.06 2	0.82 0.15-2.20 4	1.80 0.04-6.00 11	0.42 0.02-1.24 6	0.04 0.02-0.08 4	1.62 0.11-2.86 15	0.18 0.15-0.20 2	0.07 0.02-0.17 13	0.07 0.04-0.09 2
	Canned											
	Smoked					0.23						
	Undrained					0.92						
	Cooked											
	Fried											
	Battered	12.00										
	Platter	10.60										
	Steamed	5.00							1.30			
	Dried				10.80	13.27 3.70-22.84 2						
	Salted					0.32						
	Smoked	10.00				1.69						
Hake <u>Urophycis brasiliensis</u>	Muscle Raw	8.00 5.00-11.00 2	13.74 2.22-33.00 3				0.25	0.05	7.55 0.25-19.40 3		0.38	
Hake, Black <u>Merluccius senegalensis</u>	Muscle Raw										0.20	
Hake, Chilian <u>Merluccius gayi</u>	Muscle Raw	12.10										
	Whole Dried	58.90							46.40			
Hake, European <u>Merluccius merluccius</u>	Muscle Raw	11.67	3.16 3.00-3.31 2				0.62 0.53-0.71 2	0.30 0.10-0.50 2	0.37 0.30-0.44 2		0.24	
	Dried				12.30							
Hake, Luminous <u>Steindachneria argentea</u>	Muscle Raw		2.89				1.12		0.55		0.31	
Hake, Pacific <u>Merluccius productus</u>	Muscle Raw			0.07	5.80		0.38	0.02			0.11 0.10-0.12 3	
	Whole Fishmeal	116.00	92.00	303.00		0.81			6.00	7.10		
Hake, Silver <u>Urophycis tenuis</u>	Muscle Raw											0.01
Hake, Silver, Whiting <u>Merluccius bilinearis</u>	Muscle Raw				2.00 0.28-3.71 2		0.51	0.05			0.17 0.04-0.45 4	0.04

Table 16.--Microelement (Group 1) composition of finfishes, whales, and products.

Common and Scientific Name	Description	Parts Per Million (PPM)										
		Iron	Zinc	Fluorine	Arsenic	Iodine	Lead	Cadmium	Copper	Manganese	Mercury	Methyl-mercury
Hake, Squirrel <u>Urophycis chuss</u>	Muscle Raw										0.11 0.09-0.12 2	0.03
Hake Gadidae	Muscle Raw	18.50 12.00-25.00 2			0.25	6.15 0.30-12.00 2	0.04		1.60	0.30	0.11	
	Cooked Steamed	6.00							1.20			
Halfbeak <u>Reporhamphus australias</u>	Muscle Raw	10.00							2.00			
Halfbeak, Non-spotted <u>Hemiramphus georgii</u>	Muscle Raw	14.50										
Halfbeak Exocoetidae	Muscle Raw	12.00 10.00-14.00 2								0.10		
Halibut, Atlantic <u>Hippoglossus hippoglossus</u>	Muscle Raw					0.28 0.25-0.30 2			2.30	0.00	0.30 0.08-0.80 7	0.03
Halibut, Pacific <u>Hippoglossus stenolepis</u>	Muscle Raw	0.90	0.80		1.44		0.35	0.04			0.30 0.18-0.42 3	
Halibut Pleuronectidae	Muscle Raw	10.04 6.61-16.00 6			2.28 0.11-4.45 2	0.52			1.19 0.07-2.30 5	0.48 0.03-1.30 2	0.21 0.02-0.41 15	
	Canned Smoked Cooked Steamed	6.00				0.23			0.07			
Hatchetfish Sternoptychidae	Whole Raw											0.02
Herring <u>Ilisha africana</u>	Muscle Raw	7.00										
Herring, Atlantic <u>Clupea harengus</u>	Muscle Raw	10.00	7.01				0.20	0.03	1.71 0.92-2.50 2	1.20	0.14 0.04-0.44 5	0.12
	Canned In Mushroom Sauce In Mustard In Oil	18.00 52.00 36.33 14.00-60.00 3				0.57						0.02
	Kipperd Smoked	80.00 18.00		7.47		1.00						0.08 0.02-0.10 3
	Whole Raw Fishmeal	126.50 59.50-221.08 5	97.64 53.50-121.00 5		6.15 5.60-6.70 2		0.90 0.40-1.39 2	0.17 0.10-0.24 2	4.84 2.20-6.48 5	4.82 4.63-5.00 2	0.17 0.16-0.20 3	

Table 16.--Microelement (Group 1) composition of finfishes, whales, and products.

Common and Scientific Name	Description	Parts Per Million (PPM)										
		Iron	Zinc	Fluorine	Arsenic	Iodine	Lead	Cadmium	Copper	Manganese	Mercury	Methylmercury
Herring, Bachiva, Bacha <u>Clupisoma garua</u>	Muscle Raw	14.15 5.30-23.00 2							2.16 1.12-3.20 2			
Herring, Deep Bodied <u>Sardinella perforata</u>	Muscle Raw	20.13 15.00-30.00 3				0.13			0.40			
Herring, Fimbriated, Tunsoy <u>Sardinella fimbriata</u>	Muscle Raw	34.79 12.80-91.90 7										
	Dried	26.00										
	Salted & Dried	26.00										
	Smoked	7.60										
	Whole											
	Dried	32.00										
	Smoked	46.00										
Herring, Fresh Water <u>Harengula tawilis</u>	Muscle Salted, Dried & Smoked	8.00										
Herring, Machete <u>Ethmidium chilcae</u>	Muscle Raw	26.00 19.00-33.00 2				0.00			0.00			
Herring, Pacific <u>Clupea pallasii</u>	Muscle Raw	17.00 6.00-28.00 2		1.60		0.37 0.21-0.52 2			3.00	0.20		0.01
	Dried	52.00										
	Salted	12.00										
		4.00-20.00 2										
	Smoked	50.00										
Herring, Pollona <u>Ilisha abnormis</u>	Muscle Raw	6.00							0.12			
Herring, Round <u>Etrumeus micropus</u>	Muscle Raw										0.07	
Herring, Round <u>Etrumeus teres</u>	Muscle Raw	20.00										
Herring, Wolf <u>Chirocentrus dorab</u>	Muscle Raw	18.67 10.90-34.10 3										
Herring Clupeidae	Muscle Raw	10.86 4.00-32.00 12	7.43 5.86-9.00 2	5.36	0.20 0.15-0.25 3	0.12 0.10-0.18 3		0.02	1.70 0.20-3.60 9	0.38 0.16-0.64 4	0.23 0.06-0.55 9	
	Canned											
	In Bouillon	23.00				1.00						
	In Brine										0.07	
	In Olive Oil											
	Smoked					0.58						

Table 16.--Microelement (Group 1) composition of finfishes, whales, and products.

Common and Scientific Name	Description	Iron	Zinc	Fluorine	Arsenic	Iodine	Lead	Cadmium	Copper	Man- ganese	Mercury	Methyl- mercury
	In Tomato Sauce	35.00				0.66 0.32-1.00 2	0.30					
	Jellied					0.40						
	Smoked					0.48						
	Unspecified					0.22	1.29	0.03	0.70 0.40-1.00 2	0.80	0.27 0.07-0.47 2	
	Cooked											
	Baked											
	In Vinegar	16.00										
	Fried											
	Rollled in											
	Flour	51.00										
	Rollled in											
	Oatmeal	19.00										
	Dried	43.50							1.50			
		31.00-56.00 2										
	Kipperd	10.50 7.00-14.00 2	20.29			1.00		1.28	1.70			
	Salted	30.00				1.69 0.49-2.88 2						
	Salted & Dried	72.00										
	Salted, Dried & Smoked						0.30					
	Smoked	50.00		3.50		0.77 0.53-1.01 2				0.04		
	Smoked & Soused					0.34						
	Muscle											
	Soused					0.54						
	Whole											
	Raw	8.85 7.00-11.20 3	20.32 4.64-36.00 2			0.50			0.91	1.09		
	Fishmeal	135.00 82.00-172.00 3	109.33 100.00-120.00 3	500.00		1.17 0.50-1.83 2			5.00 4.50-5.50 3	4.10 2.00-6.50 3	0.08	
	FPC			156.10 156.10-156.10 2								
Hottentot	Muscle											
<u>Caranthus blockii</u>	Raw					1.58						
Jacopever	Muscle											
<u>Sebastichthys capensis</u>						1.56						
Jewfish	Muscle											
<u>Pseudosciaena coiber</u>	Raw	44.40										
Jewfish	Muscle											
<u>Sciaena antarctica</u>	Raw	9.97 9.94-10.00 2							5.25 0.50-10.00 2			

Table 16.--Microelement (Group 1) composition of finfishes, whales, and products.

Common and Scientific Name	Description	Iron	Zinc	Fluorine	Arsenic	Iodine	Lead	Cadmium	Copper	Man- ganese	Mercury	Methyl- mercury
Jewfish <u>Sciaena sina</u>	Muscle Raw	27.27 20.59-47.30 4										
Kabeljou <u>Sciaena hololepidotus</u>	Muscle Raw	22.00			0.00		1.00		1.20			
Ladyfish <u>Elops saurus</u>	Muscle Raw				0.71						0.70	
Lamprey <u>Entosphenus japonicus</u>	Muscle Raw Dried	90.00 140.00										
Lamprey, Chestnut <u>Ichthyomyzon castaneus</u>	Muscle Raw										0.11	
Lamprey, Sea <u>Petromyzon marinus</u>	Muscle Raw										1.05	
Lamprey Petromyzontidae	Muscle Raw										0.53	
Lance, Sand <u>Ammodytes americanus</u>	Muscle Raw	80.00										
	Whole Fishmeal	85.00	95.00			28.00			2.70	4.50		
Lancetfish, Longnose <u>Alepisaurus ferox</u>	Muscle Raw										0.08	
Lanternfish <u>Ceratoscopelus warmingii</u>	Whole, Headless Raw		6.79		0.19			0.14	4.27		0.04	
Lanternfish <u>Diaphus dunieri</u>	Whole, Headless Raw		10.91		0.67			0.18			0.03	
Lanternfish <u>Diaphus mollis</u>	Whole, Headless Raw		6.11		0.18			0.14	1.26		0.02	
Lanternfish <u>Hygophum hypgomi</u>	Whole, Headless Raw		3.39		0.23			0.02	0.77		0.07	
Lanternfish <u>Hygophum macrochir</u>	Whole, Headless Raw				0.95			0.37			0.10	
Lanternfish <u>Lampanyctus pusillus</u>	Whole, Headless Raw		6.77 5.16-8.37 2		0.18 0.17-0.19 2			0.18 0.08-0.28 2	2.27 0.52-4.01 2		0.05 0.01-0.05 2	
Lanternfish <u>Lampanyctus ritteri</u>	Whole, Headless Raw										0.04	
Lanternfish <u>Lobianchia dofleini</u>	Whole, Headless Raw		7.35		0.15			0.24	3.45		0.03	

Table 16.--Microelement (Group 1) composition of finfishes, whales, and products.

Common and Scientific Name	Description	Parts Per Million (PPM)										
		Iron	Zinc	Fluorine	Arsenic	Iodine	Lead	Cadmium	Copper	Manganese	Mercury	Methylmercury
Lanternfish <u>Notoscopelus caudispinus</u>	Whole, Headless Raw		16.60		0.21			0.08	0.66		0.10	
Lanternfish, Blue <u>Tarletonbeania crenularis</u>	Muscle Raw										0.03	
	Whole Raw										0.03	
Lanternfish, California Headlight Fish <u>Diaphus theta</u>	Muscle Raw										0.06	
	Whole Raw										0.06	
Lanternfish, Northern <u>Stenobrachius leucopsarus</u>	Whole Raw										0.03	
Leatherjacket, Yellow <u>Scomber lyson</u>	Muscle Raw	2.00	10.00						0.30			
Leerfish <u>Lichia amia</u>	Muscle Raw	8.00										
Levovangan <u>Monotaxes grandoculis</u>	Muscle Raw	11.00										
Ling <u>Molva molva</u>	Muscle Raw	5.06 3.19-7.00 3	7.83			2.12 1.20-3.00 3	0.20	0.02	1.13		0.20 0.06-0.50 4	
	Cooked Fried Battered & Crumbs	8.00										
Lingcod <u>Ophiodon elongatus</u>	Muscle Raw	4.90 0 20-9.60 2	0.30		0.30	0.24 0.14-0.33 3	0.05 0.03-0.07 2		4.10	0.33	0.26 0.10-0.43 4	
	Smoked					0.81						
Lizardfish <u>Saurida tumbil</u>	Muscle Raw	4.40										
Lizardfish, Longer <u>Saurida elongata</u>	Muscle Raw		11.80				0.01	0.04	1.25		0.10	
Lizardfish, Spotted Tail <u>Saurida undosquamis</u>	Muscle Raw	0.20	0.40									
Lizardfish Synodontidae	Muscle Raw	6.00	6.80				0.10	0.10	0.71		0.02	
	Whole Dried	36.00										
Loach, Weatherfish <u>Misgurnus anguillicaudatus</u>	Muscle Raw	58.00										
Loach Cobitidae	Muscle Raw	80.00										

Table 16.--Microelement (Group 1) composition of finfishes, whales, and products.

Common and Scientific Name	Description	Iron	Zinc	Fluorine	Arsenic	Iodine	Lead	Cadmium	Copper	Man- ganese	Mercury	Methyl- mercury
Longaray Ambassidae	Muscle Raw	5.40										
Lookdown <u>Selene vomer</u>	Muscle Raw	73.60										
Lumpfish <u>Cyclopterus lumpus</u>	Muscle Raw										0.06	
Maasbanker, Mackerel, Jack <u>Trachurus trachurus</u>	Muscle Raw		6.62		0.00	0.48	2.32 0.64-4.00 2	0.08	1.89 0.77-3.00 2		0.38 0.08-0.67 4	
	Canned Cooked Unspecified				0.50		0.15 0.40		1.30			
Mackerel <u>Scomber australias</u>	Muscle Raw	10.00							0.03		0.05 0.04-0.05 2	
Mackerel <u>Scomber microlepidotus</u>	Muscle Raw	84.90										
Mackerel, Atlantic <u>Scomber scombrus</u>	Muscle Raw	10.12 8.00-12.24 2	6.39 5.16-7.61 2			1.00 0.10-1.58 16	0.84 0.81-0.87 2	0.05	2.23 0.75-6.00 4		0.19	
	Dried				5.80							
	Eviscerated Raw					1.50 1.28-1.60 11						
	Whole Fishmeal	130.07 62.00-241.20 3	73.35 48.50-98.20 2				1.36 0.35-2.36 2	0.37 0.34-0.40 2	3.67 1.70-5.44 3		0.16 0.15-0.17 2	
	Presscake	15.00	84.00		4.50				2.00		0.41	
Mackerel, Frigate <u>Auxis rochei</u>	Muscle Raw	59.00									0.95	
Mackerel, Frigate <u>Auxis tapernosoma</u>	Muscle Raw	50.00										0.07 0.06-0.07 2
Mackerel, Horse <u>Caranx melampygus</u>	Eviscerated Raw	20.10										
Mackerel, Horse <u>Carangidae</u>	Muscle Raw Dried	25.06	6.44					0.01				
Mackerel, Indian <u>Rastrelliger neglectus</u>	Muscle Raw					1.30 1.10-1.53 4						

Table 16.--Microelement (Group 1) composition of finfishes, whales, and products.

Common and Scientific Name	Description	Iron	Zinc	Fluorine	Arsenic	Iodine	Lead	Cadmium	Copper	Man- ganese	Mercury	Methyl- mercury
Mackerel, Jack <u>Trachurus japonicus</u>	Muscle											
	Raw	4.20	1.10							0.20		0.04
		1.40-7.00										
		2										
	Canned											
	Seasoned	30.00										
	Cooked											
Mackerel, Japanese, Spanish <u>Scomberomorus niphonius</u>	Muscle											
	Raw					0.60						
	Cooked		0.60			0.15						
	Unspecified					0.14						
Mackerel, King <u>Scomberomorus cavalla</u>	Muscle											
	Raw		0.60			0.15						
	Cooked											
	Unspecified					0.14						
Mackerel, King, Seer <u>Scomberomorus commersoni</u>	Muscle											
	Raw	14.97									0.11	
		3.85-20.31										
		7										
	Dried	15.50										
		14.50-17.00										
		3										
Mackerel, Long-Jawed <u>Rastrelliger canagurta</u>	Muscle											
	Raw		14.25						0.34			
			14.20-14.30									
			2									
	Dried		36.18						1.01			
			29.00-43.36									
			2									
Mackerel, Pacific Chub <u>Scomber japonicus/colias</u>	Muscle											
	Raw	25.88	1.00	1.50		0.55			2.00	0.25	0.08	0.01
		15.00-51.00				0.10-1.33						
		5				3						
	Canned	19.00										
		16.00-22.00										
		2										
Mackerel, Short-Bodied, Hasa Hasa <u>Rastrelliger brachysomus</u>	Muscle											
	Raw	89.00										
	Smoked	118.00										
		116.00-120.00										
		2										
Mackerel, Spanish <u>Scomberomorus maculatus</u>	Muscle											
	Raw	9.90	3.20		0.38	0.40		0.06	0.49		0.09	
Mackerel, Spotted, Spanish <u>Scomberomorus guttatus</u>	Muscle											
	Raw	53.70										
Mackerel, Surmai <u>Scomberomorus kuhlii</u>	Muscle											
	Raw	20.13										
	Salted & Dried	43.51										

Table 16.--Microelement (Group 1) composition of finfishes, whales, and products.

Common and Scientific Name	Description	Parts Per Million (PPM)										
		Iron	Zinc	Fluorine	Arsenic	Iodine	Lead	Cadmium	Copper	Manganese	Mercury	Methylmercury
Mackerel, West African, Spanish <u>Scomberomorus tritor</u>	Muscle Raw	12.00										
Mackerel Scombridae	Muscle Raw	14.09 7.50-24.00 12	5.38		0.19 0.03-0.36 7	1.51 0.50-4.50 4			2.28 0.95-2.60 6	0.57 0.33-1.23 3	0.19 0.04-0.34 4	
	Canned	19.00	10.10		0.40	1.09	0.60	0.02	2.27 1.20-3.40 3	0.20	0.04 0.03-0.05 2	
	Boiled	16.00										
	In Bouillon	22.00				1.00						
	Marinated	19.00				1.50						
	In Oil	15.50				1.00						
		11.00-20.00 2										
	In Tomato Sauce	14.00				1.00						
	Cooked											
	Fried	12.00										
	Unspecified					0.36						
	Dried	70.00									0.35	0.23
	Salted	70.00				0.40						
	Salted & Dried	29.00										
	Smoked	12.00										
Eviscerated												
Raw	10.00							2.52 2.04-3.00 2	0.56			
Whole												
Fishmeal						5.60						
Marlin <u>Makaira manazza</u>	Muscle Raw	1.40	0.80									
Marlin, Black <u>Makaira indica</u>	Muscle Raw		8.24 7.70-8.65 4		0.51 0.45-0.63 4	0.65 0.59-0.70 4		0.06 0.05-0.07 4	0.50 0.40-0.70 3		3.28 0.50-7.95 5	
Marlin, Blue <u>Makaira nigricans</u>	Muscle Raw										2.50	
Marlin, Pacific, Blue <u>Makaira ampla</u>	Muscle Raw										4.78	0.93
Marlin, Striped <u>Makaira audax</u>	Muscle Raw										0.65 0.50-0.80 2	
Marlin, White <u>Tetrapturus albidus</u>	Muscle Raw										1.34	
Megrim <u>Lepidorhombus whiffiagonis</u>	Muscle Raw	12.00				0.29						
	Cooked											
	Fried											
	Battered & Breaded	6.00										
	Steamed	9.00										

Table 16.--Microelement (Group 1) composition of finfishes, whales, and products.

Common and Scientific Name	Description	Parts Per Million (PPM)										
		Iron	Zinc	Fluorine	Arsenic	Iodine	Lead	Cadmium	Copper	Manganese	Mercury	Methyl-mercury
Menhaden, Atlantic <u>Brevoortia tyrannus</u>	Muscle											
	Raw	13.00				0.31					0.09	
						0.16-0.46						
						2						
	Whole											
Menhaden, Gulf <u>Brevoortia gunteri</u>	Fishmeal	387.70	133.35	68.00					9.50	24.24		
		345.00-430.40	108.20-158.50						5.77-13.20	22.98-25.50		
		2	2						2	2		
	FPC			58.00								
	Whole											
Menhaden Clupeidae	FPC			72.00								
	Fishmeal	438.00	150.90						11.20	35.80		
			150.80-151.00						11.00-11.40	35.60-36.00		
Milkfish <u>Chanos chanos</u>									2	2		
	Muscle											
	Raw	7.10									0.01	
		3.20-11.00										
		2										
Milkfish <u>Chanos chanos</u>	Cooked											
	Unspecified	11.00										
	Smoked	10.45										
Milkfish <u>Chanos chanos</u>												
		9.90-11.00										
		2										
Minnow, Common <u>Zacco platypus</u>	Muscle											
	Raw	5.00										
Minnow, Stoneroller <u>Camptostoma anomalum</u>	Whole											
	Raw										0.04	0.03
Minnow, Suckermouth <u>Phenacobius mirabilis</u>	Whole											
	Raw				0.22							
Mojarra <u>Diapterus evermanni</u>	Muscle											
	Raw	9.80										
Mojarra, Spotted <u>Cerres filamentosus</u>	Muscle											
	Raw	4.20										
		4.00-4.40										
Mojarra <u>Cerres filamentosus</u>												
		2										
Mooneye <u>Hiodon tergisus</u>	Muscle											
	Raw										1.03	
Mooneye, Goldeye <u>Hiodon alosoides</u>											0.16-2.60	
											3	
Mooneye, Goldeye <u>Hiodon alosoides</u>	Muscle											
	Raw										0.82	0.52
Mullet <u>Mugil brasiliensis</u>											0.08-2.31	
											4	
	Muscle					1.00						
Mullet <u>Mugil brasiliensis</u>	Raw											
	Whole											
Mullet <u>Mugil brasiliensis</u>	Cooked											
	Unspecified					0.80						
Mullet <u>Mugil liza</u>	Muscle											
	Raw		15.00									

Table 16.--Microelement (Group 1) composition of finfishes, whales, and products.

Common and Scientific Name	Description	Parts Per Million (PPM)										
		Iron	Zinc	Fluorine	Arsenic	Iodine	Lead	Cadmium	Copper	Man- ganese	Mercury	Methyl- mercury
Mullet <u>Mugil nasus</u>	Muscle Raw					0.60						
Mullet <u>Mugil oeur</u>	Muscle Raw	43.80										
Mullet, Bhanger <u>Mugil tade</u>	Muscle Raw	0.10						0.15				
Mullet, Black Fin <u>Mugil melinopterus</u>	Muscle Raw Dried	3.90 25.00										
Mullet, Ca'Doi <u>Mugil affinos</u>	Muscle Raw	6.30										
Mullet, Gray <u>Mugil auratus</u>	Muscle Raw	45.00	5.86				1.00					
Mullet, Gray, Boi <u>Mugil speigleri</u>	Muscle Raw	23.90										
Mullet, Gray Harder <u>Mugil capito</u>	Muscle Raw					1.60				0.20		
Mullet, Indian <u>Mugil corsula</u>	Muscle Raw	25.00										
	Eviscerated Dried	150.00						16.00				
Mullet, Kechki <u>Mugil cascasia</u>	Muscle Raw	28.00						1.20				
	Whole Dried	150.00						15.00				
Mullet, Long-Finned <u>Mugil vaigiensis</u>	Muscle Raw	5.00										
Mullet, Parsey <u>Mugil parsia</u>	Muscle Raw	10.10 3.27-20.50 3						0.58 0.14-1.02 2				
Mullet, Striped <u>Mugil cephalus</u>	Muscle Raw	14.61 1.00-50.50 7	5.91 0.80-13.30 4		4.13 0.26-8.00 2	3.30 1.63-4.85 3	0.69 0.60-0.78 2	0.90 0.05-2.59 3	0.75 0.03-2.10 6	0.50	0.06 0.01-0.20 6	0.04 0.03-0.05 2
	Eviscerated Salted					0.29						
Mullet, Yelloweye <u>Aldrichetta forsteri</u>	Muscle Raw Cooked Baked Boiled Fried					0.67 0.42 0.38 0.43						
Mullet Mugilidae	Muscle Raw	17.00 9.68-50.50 7	3.98 2.65-5.30 2	1.09		4.85		0.08	0.90 0.80-1.00 2		0.39 0.21-0.50 3	

Table 16.--Microelement (Group 1) composition of finfishes, whales, and products.

Common and Scientific Name	Description	Iron	Zinc	Fluorine	Arsenic	Iodine	Lead	Cadmium	Copper	Man- ganese	Mercury	Methyl- mercury
		Parts Per Million (PPM)										
	Cooked											
	Fried											
	In Oil	28.00										
	Steamed	14.50										
		9.00-20.00										
		2										
	Salted					0.29						
	Salted & Dried	50.50										
	Whole											
	Raw								2.40			
Nemipterid, Long-Tailed	Muscle											
<u>Nemipterus japonicus</u>	Raw	5.50										
Nemipterid, Ribbon-Finned	Muscle											
<u>Nemipterus taenipterus</u>	Raw	2.95										
		2.90-3.00										
		2										
	Dried	7.00										
	Salted & Dried	7.10										
Nemipterid, Roncador	Muscle											
<u>Nemipterus virgatus</u>	Raw	1.40	1.00									
Nemipterid	Muscle											
Nemipteridae	Raw		6.80				0.08	0.05	0.80		0.02	
Pandora, Sea Bream	Muscle											
<u>Pagellus erythrinus</u>	Raw		2.86			1.44	0.63	0.06	0.22		0.58	
											0.27-1.02	
											3	
Parrotfish	Muscle											
<u>Scarus mechipunctatus</u>	Raw	4.85										
		4.70-5.00										
		2										
Parrotfish, Loro	Muscle											
<u>Sparisoma squalidum</u>	Raw	12.10										
Parrotfish	Muscle											
Scaridae	Raw										0.05	0.05
Perch	Muscle											
<u>Perca fluviatilis</u>	Raw					0.02					1.37	1.24
											0.30-4.93	
											5	
	Whole											
	Raw		23.00									
Perch, Climbing	Muscle											
<u>Anabas testudenicus</u>	Raw	6.88							1.62			
		5.20-8.89										
		3										
Perch, Climbing, Gourami	Muscle											
<u>Trichogaster fasciata</u>	Raw	9.00							1.00			
Perch, Climbing, Gourami	Muscle											
<u>Trichogaster pectoralis</u>	Raw	23.00										
Perch, Climbing, Gourami	Muscle											
<u>Trichogaster trichopterus</u>	Raw	3.45										

Table 16.--Microelement (Group 1) composition of finfishes, whales, and products.

Common and Scientific Name	Description	Parts Per Million (PPM)									
		Iron	Zinc	Fluorine	Arsenic	Iodine	Lead	Cadmium	Copper	Manganese	Mercury
Perch, Climbing <i>Anabantidae</i>	Muscle Raw Dried	16.00 25.06									
Perch, Golden, Callopo <i>Plectroplites ambiguus</i>	Muscle Raw	10.00							0.04		
Perch, Sand <i>Psammoperca waigiensis</i>	Muscle Raw	6.00									
Perch, Sauger <i>Stizostedion canadense</i>	Muscle Raw										0.68 0.08-1.60
Perch, Silver <i>Damalichthys argyrosomus</i>	Muscle Raw					0.18					10
Perch, Trout <i>Percopsis omiscomaycus</i>	Whole Raw				0.04			0.08	2.70		
Perch, White <i>Morone americanus</i>	Muscle Raw					0.42					
Perch, Yellow <i>Perca flavescens</i>	Muscle Raw	5.60	12.00	0.05		0.02	0.50	0.03 0.02-0.05 2	2.53 1.28-3.70 3	0.21	0.35 0.13-1.40 16
Perch Percidae	Muscle Raw		12.85 0.70-25.00 2		0.57	0.08 0.04-0.12 2	0.77 0.60-0.90 4	0.04			0.54 0.15-1.30 17
Picarel <i>Maena maena</i>	Muscle Raw										0.25
Pigfish, Grunt <i>Orthopristes chrysoptera</i>	Muscle Raw	11.00	29.70 8.40-51.00 2						1.60	1.80	
Pike, Chain, Pickerel <i>Esox niger</i>	Muscle Raw Eviscerated Raw							0.02			0.75
							0.80 0.57-1.00 6				
Pike, Muskellunge <i>Esox masquinongy</i>	Muscle Raw	6.20						0.02	2.50 2.50-2.50 2	0.22 0.20-0.23 2	2.51 0.37-6.70 4
Pike, Northern <i>Esox lucius</i>	Muscle Raw	4.70 3.40-6.00 2	11.10 2.50-19.00 5	0.06 0.05-0.09 3	0.15 0.03-0.30 3	0.59 0.50-0.85 4	0.05 0.03-0.05 4	1.00 0.70-1.70 4	2.36 0.93-3.16 3	1.99 0.11-15.17 2	1.44
Pike, Perch <i>Lucioperca lucioperca</i>	Muscle Raw Eviscerated Raw										0.92 0.92
							0.75 0.70-0.80 2				

Table 16.--Microelement (Group 1) composition of finfishes, whales, and products.

Common and Scientific Name	Description	Iron	Zinc	Fluorine	Arsenic	Iodine	Lead	Cadmium	Copper	Man- ganese	Mercury	Methyl- mercury
	Eviscerated											
	Raw						0.68					
							0.55-0.80					
							5					
Pike, Pickerel	Muscle											
<u>Esox reticulatus</u>	Raw					0.07						
Pike	Muscle											
Esocidae	Raw	5.90		5.53					2.38	0.19	1.48	
		4.31-8.00							1.60-3.40	0.18-0.20	0.15-8.14	
		4							2	6	16	
	Whole											
	Raw				0.34			0.21				
Pilchard, European	Muscle											
<u>Clupea pilchardus</u>	Raw	23.58				0.16	0.81	0.05	1.32		0.22	
		12.00-45.00					0.50-1.11		0.95-2.00		0.05-0.51	
		4					2		3		6	
	Cooked											
	In Oil	14.00				0.13				1.20		
Pilchard, Japanese	Muscle											
<u>Sardinops melanosticta</u>	Raw	46.90	81.00						3.60	0.80		0.03
	Canned											
	In Oil	30.00										
	Plain	40.00										
	Seasoned	40.00										
	In Tomato											
	Sauce	45.00										
	Dried	49.00										
		26.00-72.00										
		2										
	Salted	30.00										
Pilchard, Pacific	Muscle											
<u>Sardinops (Sardina) caerulea</u>	Raw	24.83				0.13			1.66			
	Canned											
	In Tomato											
	Sauce	41.00									0.02	
											0.01-0.03	
											2	
Pilchard	Muscle											
Clupeidae	Canned											
	Unspecified				0.50	0.32	2.00		1.88		0.09	
									1.10-2.65			
									2			
	Salt Added	31.00							2.10			
	In Tomato											
	Sauce	41.90										
Pintadilla	Muscle											
<u>Cheilodactulus variegatus</u>	Raw	17.00							7.00			
		16.00-18.00										
		2										
Pipefish	Muscle											
Syngnathidae	Raw		34.50					0.05	0.70	15.00		
Plaice, American	Muscle											
<u>Hippoglossoides platessoides</u>	Raw										0.14	0.07

Table 16.--Microelement (Group 1) composition of finfishes, whales, and products.

Common and Scientific Name	Description	Parts Per Million (PPM)										
		Iron	Zinc	Fluorine	Arsenic	Iodine	Lead	Cadmium	Copper	Manganese	Mercury	Methylmercury
Plaice, American <u>Pleuronectes platessa</u>	Muscle											
	Raw		3.61			0.56	0.20		0.31		0.24	
			3.00-4.22			0.50-0.62					0.02-0.58	
			2			2					7	
Plaice Pleuronectidae	Cooked											
	Boiled					0.28						
	Grilled					0.52						
Pollack, Saithe, Coalfish <u>Pollachius virens</u>	Muscle											
	Raw	5.69	3.25		0.94				0.22	0.35		0.22
		3.38-8.00			0.42-1.46							0.05-0.37
		2			2							5
Pollack, Saithe, Coalfish <u>Pollachius virens</u>	Cooked											
	Fried											
	Battered & Breaded	8.00							1.50			
	Steamed	6.00										
Pollack, Saithe, Coalfish <u>Pollachius virens</u>	Muscle											
	Raw	7.08	7.17		2.35	1.17	1.64	0.79			0.16	0.04
		6.17-8.00				0.12-2.50		0.43-1.15			0.05-0.55	
		2				5		2			11	
Pollack, Saithe, Coalfish <u>Pollachius virens</u>	Canned					0.77						
	Cooked											
	Unspecified				7.20	3.02					0.20	
	Dried					1.33-4.71						
Pollack, Saithe, Coalfish <u>Pollachius virens</u>						2						
	Salted & Dried					1.45						
	Offal											
	Fishmeal	611.00										
Pollack Gadidae	Muscle											
	Raw	6.15						0.46			0.05	
		4.00-8.30									0.03-0.07	
		2									2	
Pollack Gadidae	Cooked											
	Fried	28.00										
	Steamed	5.00										
	Dried	13.00										
Pollack Gadidae	Smoked										0.01	
Pomfret <u>Pampus raii</u>	Muscle											
	Raw					1.47					0.10	
Pomfret, Silver <u>Pampus argenteus</u>	Muscle											
	Raw	9.70	9.10					0.29	0.85		0.09	
		3.00-16.40							0.50-1.20		0.02-0.15	
		2							2		2	
Pompano, Florida, Carolina <u>Trachinotus carolinus</u>	Muscle											
	Raw					0.16						
						0.08-0.24						
						2						
Pompano, Florida, Carolina <u>Trachinotus carolinus</u>	Cooked											
	Unspecified					0.22						
Pompano, Pacific <u>Neptomenus crassus</u>	Muscle											
	Raw	27.08										
		27.00-27.15										
		2										
Pompano, Permit <u>Trachinotus falcatus</u>	Muscle											
	Raw	4.00										

Table 16.--Microelement (Group 1) composition of finfishes, whales, and products.

Common and Scientific Name	Description	Iron	Zinc	Fluorine	Arsenic	Iodine	Lead	Cadmium	Copper	Man- ganese	Mercury	Methyl- mercury
Pompano	Muscle											
Carangidae	Raw	5.60										
	Dried	51.00										
Porcupinefish	Muscle											
<u>Atopomycterus nidthemens</u>	Raw		12.92					0.15	3.20	3.70		
Porgy	Muscle											
<u>Pagellus orphys</u>	Raw	27.50										
Porgy, Aligote	Muscle										0.11	
<u>Pagellus acarne</u>	Raw										0.06-0.16	
											2	
Porgy, Bogue	Muscle											
<u>Sarpa (box) boops</u>	Raw		7.38				0.51	0.07	0.31		0.16	
			5.88-10.25				0.37-0.62	0.05-0.08	0.25-0.39		0.02-0.34	
			3				3	2	3		4	
Porgy, Japanese	Muscle											
<u>Pagrus major</u>	Raw											0.11
Porgy, Large-Eyed, Dentex	Muscle										0.14	
<u>pentex macrophthalmus</u>	Raw										0.06-0.24	
											2	
Porgy, Panga	Muscle											
<u>Pagrus lanarius</u>	Raw					1.47						
						1.45-1.48						
						2						
Porgy, Red Roman	Muscle											
<u>Pagrus laticeps</u>	Raw					2.16						
Porgy, Sheepshead	Muscle											
<u>Archosargus probatocephalus</u>	Raw										0.23	
											0.07-0.40	
											2	
	Whole											
	Raw										0.18	
	FPC										1.00	
Porgy	Muscle											
Sparidae	Raw	9.33						0.01			0.39	
		4.00-13.00									0.09-0.94	
		6									5	
	Cooked											
	Steamed	5.00										
		4.00-6.00										
		2										
	Dried										1.57	1.50
Pout, Fanica	Muscle											
<u>Gadus luscus</u>	Dried				38.60							
Pout, Norway	Whole											
<u>Gadus esmarki</u>	Fishmeal	429.00	124.00		3.90		0.70	0.21	5.38		0.16	
			68.00-180.00						2.90-7.87		0.12-0.40	
			2						2		2	

Table 16.--Microelement (Group 1) composition of finfishes, whales, and products.

Common and Scientific Name	Description	Parts Per Million (PPM)										
		Iron	Zinc	Fluorine	Arsenic	Iodine	Lead	Cadmium	Copper	Manganese	Mercury	Methyl-mercury
Puffer, Swellfish <u>Tetraodontidae</u>	Muscle Raw	7.00 6.00-8.00 2										
Queenfish, Leatherjacket <u>Chorinemus tol</u>	Muscle Raw	79.20										
Rabbitfish <u>Siganus (Teuthis) javis</u>	Muscle Raw Dried	5.00 12.00										
	Salted & Fermented	166.00										
Ratfish <u>Hydrolagus colliciei</u>	Muscle Raw				7.70							
Ray, Eagle <u>Actobatus peruvianus</u>	Muscle Raw Cooked Baked	14.70 12.00				18.07						
Ray, Eagle <u>Rhinoptera sewelli</u>	Muscle Raw	53.00	1.80		1.32			0.06	0.65		0.28	
Ray, Electric, Atlantic, Torpedo <u>Torpedo nobiliana</u>	Whole Raw		3.30									
Ray, Electric, Marbled <u>Torpedo marmorata</u>	Muscle Raw	57.00										
Ray, Electric Torpedinidae	Whole Raw								3.50			
Redfish <u>Sebastes mentella</u>	Whole Raw								2.00			
Redfish, Ocean Perch <u>Sebastes marinus</u>	Muscle Raw	6.33	6.83	0.87 0.20-1.54 2	1.25	1.12	0.92 0.17-1.68 2	0.04 0.02-0.07 2	2.94 1.07-4.80 2		0.11 0.06-0.18 6	
	Offal Fishmeal										0.14	
Redfish, Ocean Perch Scorpaenidae	Muscle Raw Cooked Fried Breaded	4.00 2.99-5.00 2 12.94	2.97			1.50	0.07		0.26	0.11		
Roach <u>Rutilus rutilus</u>	Muscle Raw					1.26 1.20-1.33 2					0.39	
Rockfish, Black <u>Sebastes melanops</u>	Muscle Raw		1.03			0.43 0.18-0.93 3						

Table 16.--Microelement (Group 1) composition of finfishes, whales, and products.

Common and Scientific Name	Description	Iron	Zinc	Fluorine	Arsenic	Parts Per Million (PPM)				Copper	Manganese	Mercury	Methylmercury
						Iodine	Lead	Cadmium					
Rockfish, Copper <u>Sebastes caurinus</u>	Muscle Raw					0.09 0.04-0.14 3							
Rockfish, Flag <u>Sebastes rubrivinctus</u>	Muscle Raw											0.17	
Rockfish, Greenstriped <u>Sebastes elongatus</u>	Muscle Raw											0.46	
Rockfish, Canary <u>Sebastes pinniger</u>	Muscle Raw					0.28						0.20	
Rockfish, Osaga <u>Sebastes iracundus</u>	Muscle Raw								0.10			0.65	0.34
Rockfish, Red <u>Sebastes matsubarae</u>	Muscle Raw	5.00											
Rockfish, Red <u>Sebastes ruberrimus</u>	Muscle Raw					0.16							
Rockfish, Rougheye <u>Sebastes aleutianus</u>	Muscle Raw											0.08	
Rockfish, Yellowtail <u>Sebastes flavidus</u>	Muscle Raw											0.37	
Rockfish Scorpaenidae	Muscle Raw		1.47 0.14-2.80 2	0.39 0.30-0.60 6			1.23	0.03				0.41	
	Eviscerated Raw										3.60		
Rockling, Fourbeard <u>Enchelyopus cimbrius</u>	Muscle Raw		6.00					0.06					
Rockling, Three Headed <u>Onus tricarratus</u>	Muscle Raw											2.86 0.34-5.37 2	
Runner, Blue <u>Caranx crysos</u>	Muscle Raw Cooked Unspecified					0.30 0.24							
Runner, Rainbow <u>Elagatis bipinnulata</u>	Muscle Raw	23.95 23.90-24.00 2											
Sablefish <u>Anoplopoma fimbria</u>	Muscle Raw	12.00				0.64 0.35-1.00 5			1.20	0.11	0.38 0.14-0.51 6		
Sailfish <u>Istiophorus platypterus</u>	Muscle Raw										0.82 0.07-1.57 2		
Salmon <u>Salmo milktschitsch</u>	Muscle Canned					0.33							

Table 16.--Microelement (Group 1) composition of finfishes, whales, and products.

Common and Scientific Name	Description	Iron	Zinc	Fluorine	Arsenic	Iodine	Lead	Cadmium	Copper	Manganese	Mercury	Methyl-mercury
		Parts Per Million (PPM)										
Salmon, Atlantic <u>Salmo salar</u>	Muscle											
	Raw	11.50 10.00-13.00 2	4.70 1.40-8.00 2			0.33 0.20-0.43 3			3.00		0.09 0.04-0.16 6	0.15
	Canned					0.23						
Salmon, Australian <u>Arripis trutta</u>	Muscle											
	Raw	10.00	13.50					0.05	0.38 0.03-1.30 4	0.50		
Salmon, Chinook <u>Oncorhynchus tshawytscha</u>	Muscle											
	Raw	9.00	8.00			0.39 0.13-0.57 18			4.00			
	Canned	8.90 5.00-12.70 3				0.38 0.13-0.75 15			0.77			
	Cooked											
	Baked					0.42						
	Boiled					0.53						
	Fried					0.57						
	Salted					0.34						
	Eviscerated											
	Salted					0.34						
Salmon, Chum <u>Oncorhynchus keta</u>	Muscle											
	Raw	4.75 1.50-8.00 2	13.70 1.40-26.00 2			0.49 0.25-1.36 6			0.20	0.28 0.15-0.40 2		
	Canned	7.20 7.00-7.40 2				0.24 0.17-0.36 6						
Salmon, Coho <u>Oncorhynchus kisutch</u>	Muscle											
	Raw	13.45 8.90-18.00 2				0.21 0.11-0.29 4			0.64	0.20	0.16 0.07-0.31 4	0.02
	Canned	9.00				0.32 0.12-1.36 9			0.88		0.29 0.02-0.60 3	0.03
	Salted	8.50 7.00-10.00 2										
	Salted & Smoked	17.00										
	Eviscerated & Beheaded											
	Raw						0.65 0.50-0.98 5	0.02				
Salmon, Land-locked <u>Oncorhynchus rhodurus</u>	Muscle											
	Cooked											
	Fried											
	Oatmeal Covered	12.00										
	Steamed	9.00										
Salmon, Longtooth <u>Otolithus ruber</u>	Muscle											
Raw	27.60 7.00-48.20 2											

Table 16.--Microelement (Group 1) composition of finfishes, whales, and products.

Common and Scientific Name	Description	Parts Per Million (PPM)										
		Iron	Zinc	Fluorine	Arsenic	Iodine	Lead	Cadmium	Copper	Manganese	Mercury	Methyl-mercury
Salmon, Pink <u>Oncorhynchus gorbusha</u>	Muscle											
	Raw	9.30			0.46	0.76			0.56			
		7.00-11.00			0.33-0.70	0.21-1.48						
		2			3	5						
	Canned	11.71		9.00	0.25	0.28						
		8.24-15.00				0.12-0.56						
		4				5						
	Salted	70.00										
Salmon, Sockeye <u>Oncorhynchus nerka</u>	Muscle											
	Raw	11.80				0.68	0.92	0.07	1.36		0.07	
						0.31-1.68			0.81-1.90			
						6			2			
	Canned	10.57	11.00	8.50		0.46			1.48	0.20	0.05	0.05
		0.42-14.00				0.25-0.63			0.76-2.20			
		7				6			2			
	Offal											
	Fishmeal					1.92						
Salmon Salmonidae	Muscle											
	Raw	9.59	5.51	4.97	0.40	0.32	0.08	0.02	1.61	0.16	0.11	
		5.00-15.00	3.02-8.00	4.16-5.77		0.16-0.50			0.55-2.40	0.05-0.27	0.02-0.19	
		10	2	2		4			7	2	7	
	Canned	9.34		4.39		0.73		0.02			0.09	0.02
		5.70-16.00		4.16-4.50		0.25-1.59					0.01-0.50	
		11		3		4					8	
	Cooked											
	Steamed	8.00										
	Dried			19.34								
	Salted	8.50										
		7.00-10.00										
		2										
	Smoked	17.00				0.50						
	Offal											
	Fishmeal					1.74						
Sandfish <u>Arctoscopus japonicus</u>	Muscle											
	Raw	15.00										
	Salted & Dried	100.00										
Sardine <u>Clupanodon pseudonhispanicus</u>	Muscle											
	Raw	24.20										
Sardine <u>Opisthopterus tartoor</u>	Whole											
	Raw	49.20										
Sardine, Golden <u>Sardinella aurita</u>	Muscle											
	Raw				0.99							
Sardine, Indian <u>Sardinella longiceps</u>	Muscle											
	Raw	29.57										
		13.80-60.90										
		3										
	Dried	36.50										
	Salted & Dried	36.50										
	Smoked	8.00										
	Canned											
	In Tomato											
	Sauce	41.00										
	Unspecified										0.01	
											0.03	
Sardine, Spotted <u>Sardinella sirum</u>	Muscle											
	Dried	37.00										

Table 16.--Microelement (Group 1) composition of finfishes, whales, and products.

Common and Scientific Name	Description	Parts Per Million (PPM)										
		Iron	Zinc	Fluorine	Arsenic	Iodine	Lead	Cadmium	Copper	Manganese	Mercury	Methyl-mercury
Sardine Clupeidae	Muscle Raw	23.13	10.33	22.50		0.16	0.20	0.01	0.99	1.19	0.13	
		13.00-30.00	9.40-11.60			0.10-0.25	0.14-0.25		0.35-1.33	0.50-1.90	0.11-0.14	
	Canned	4	3			3	2		3	3	2	
		33.98	9.40	9.80		0.25	1.05	0.11	0.89	1.85	0.23	
		26.00-42.00		7.30-12.50		0.16-0.36			0.25-1.12	1.10-2.60	0.04-0.56	
		5		2		4			3	2	3	
	In Oil	22.31	16.00	16.10		1.00		0.05	0.90		0.02	
		0.40-40.00							0.40-1.40			
	Drained	9							2			
		32.14						0.13				
	Smoked		29.08									
	In Oil											
	Smoked	19.00				0.50						
	Smoked											
	In Tomato											
	Sauce	29.00				0.50						
	In Tomato											
	Sauce	27.51	21.89			0.50		0.08	1.89		0.01	
		1.53-41.00										
		5										
	In Tomato											
	Sauce & Oil	4.30	19.00					0.05	0.20			
Marinated	33.00				1.00							
Paste						8.30						
Salted					0.60							
Salted & Dried	80.00											
	60.00-100.00											
	2											
Smoked	90.00											
Whole Raw		52.50					0.22					
		28.00-77.00										
	2											
Fishmeal						1.69						
						1.60-1.78						
					2							
Saury, Pacific Cololabis saira	Muscle Raw	24.50	22.00			1.42			1.80	0.38	0.49	0.02
		8.00-30.00								0.13-0.50	0.07-0.90	
Canned	4								3	2		
	29.50											
Dried	19.00-40.00											
	4											
Salted	40.00											
Whole												
Raw	52.30											
Sawfish Pristidae	Muscle Raw	12.00										
Scad, Big-Bodied Decapterus macrostoma	Muscle Raw	6.95								0.20		
		6.90-7.00										
Salted & Dried	2											
	41.95											
	35.90-48.00											
	2											

Table 16.--Microelement (Group 1) composition of finfishes, wastes, and products.

Common and Scientific Name	Description	Parts Per Million (PPM)									
		Iron	Zinc	Fluorine	Arsenic	Iodine	Lead	Cadmium	Copper	Manganese	Mercury
Scad, Bigeyed <u>Caranx crumenophthalmus</u>	Muscle										
	Raw	38.88									
		3.80-82.10									0.09
		4									0.10
	Dried	51.00									
	Salted & Dried	50.85									
		50.70-51.00									
		2									
	Smoked	15.00									
Scad, Golden <u>Caranx kalla</u>	Muscle										
	Raw	12.50									
Scad, Round <u>Decapterus punctatus</u>	Muscle										
	Raw		4.61		0.46			0.03	0.51		0.10
Scad Carangidae	Muscle										
	Raw	13.00									
Scorpionfish, Redrock <u>Helicolenus papillosus</u>	Muscle										
	Raw	11.00						0.06	1.30	0.60	
Scorpionfish, Rosefish <u>Helicolenus dactylopterus</u>	Muscle										
	Raw										0.41
Scorpionfish, Sanford <u>Helicolenus maculatus</u>	Muscle										
	Raw					1.56					
Scorpionfish, Yellow <u>Scorpaena scropha</u>	Muscle										
	Raw		2.36				0.50	0.05	0.25	0.82 0.46-1.17 2	
Scorpionfish Scorpaenidae	Muscle										
	Raw										0.21
Sculpin, Sea Raven <u>Hemitripterus americanus</u>	Muscle										
	Raw										0.17
											0.03-0.30
											2
	Cooked										
	Steamed	7.50									
		7.00-8.00									
		2									
Scup, Sea Bream <u>Stenotomus chrysops</u>	Muscle										
	Raw					0.30					
Sea Crow <u>Corvina nigrata</u>	Muscle										
	Raw	1.00									
Sea Cucumber <u>Cucumaria lefevrei</u>	Muscle										
	Raw								9.60		
Sea Cucumber <u>Stichopus japonicus</u>	Muscle										
	Raw	46.00									
		10.00-82.00							28.00	4.00	
		2									
	Dried	417.00									
	Dried & Soaked	92.00									
Sea Cucumber Holothuroidea	Muscle										
	Raw	2.97									
		2.94-3.00									
		2									

Table 16.--Microelement (Group 1) composition of finfishes, whales, and products.

Common and Scientific Name	Description	Iron	Zinc	Fluorine	Arsenic	Iodine	Lead	Cadmium	Copper	Man- ganese	Mercury	Methyl- mercury
Sea Devil <u>Scorpaena porcus</u>	Muscle Raw		4.00				0.50	0.05	0.37		0.40	
Searobin, Gurnard <u>Trigla carax</u>	Muscle Raw										0.54	
Searobin, Gurnard <u>Trigla hirunda</u>	Muscle Raw										0.18	
Searobin, Gurnard <u>Trigla lineata</u>	Muscle Raw										0.11	
Searobin, Gurnard <u>Trigla pini</u>	Muscle Raw				0.02							
Searobin, Gurnard <u>Trigloporus lastoviza</u>	Muscle Raw		2.36				0.25	0.05	0.12		0.60	
Searobin, Gurnard, Red <u>Trigla cuculus</u>	Muscle Raw					1.20			16.20			
Searobin Triglidae	Muscle Raw				0.19	0.32						
Sea Trout, Corvina <u>Cilus monti</u>	Muscle Raw	12.00		2.42								
Sea Trout, Gray <u>Cynoscion regalis</u>	Muscle Raw					0.23						
Sea Trout, Spotted <u>Cynoscion nebulosus</u>	Muscle Raw		4.60		0.55	0.02		0.11	2.08		0.33	
Seventy-Four <u>Dentex undulosas</u>	Muscle Raw					1.83						
Shad <u>Clupea alosa</u>	Muscle Salted					0.60						
Shad <u>Ethmalosa dorsalis</u>	Muscle Raw	25.00										
	Whole Dried	32.00										
Shad <u>Konosirus punctatus</u>	Muscle Raw					1.62						
Shad, American <u>Alosa sapidissima</u>	Muscle Raw	7.00				0.31			2.30		0.09	
Shad, Bastard <u>Konosirus thrissa</u>	Muscle Raw		1.70									
Shad, Gizzard <u>Anodontostoma chacunda</u>	Muscle Raw		4.60									
	Salted & Dried		28.00									
	Smoked		8.00									
Shad, Gizzard <u>Dorosoma cepedianum</u>	Muscle Raw	40.00				0.01	1.50	0.07			0.17 0.08-0.24	

Table 16.--Microelement (Group 1) composition of finfishes, whale, and products.

Common and Scientific Name	Description	Iron	Zinc	Fluorine	Arsenic	Iodine	Lead	Cadmium	Copper	Manganese	Mercury	Methylmercury
	Eviscerated Raw				0.52							
Shad, Indian <u>Clupea tili</u>	Muscle Raw	28.40										
Shad, Indian <u>Hilsa ilisha</u>	Muscle Raw	17.58 7.13-37.30 3			0.49	0.78			2.50 1.40-3.60 2			
Shad, Slender <u>Ilisha elongata</u>	Muscle Raw	15.00			0.11							
Shad, Threadfin <u>Dorosoma petenense</u>	Whole Raw		4.43							3.31		
Shad Clupeidae	Muscle Raw	5.70 4.80-7.00 3							2.20	0.19 0.18-0.20 2	0.05 0.03-0.08 2	
	Cooked Baked With Bacon Smoked	5.80 46.00										
Shark <u>Mustelus mustelus</u>	Muscle Raw										0.11	
Shark, Basking <u>Cetorhinus maximus</u>	Muscle Raw										0.08	
Shark, Blackfinned <u>Carcharhinus melanopterus</u>	Muscle Raw		66.00						3.45 2.00-4.90 2	0.80 0.50-1.10 2	0.58	
Shark, Blacktip <u>Carcharhinus limbatus</u>	Muscle Raw	38.60										
Shark, Blue <u>Carcharhinus glaucus</u>	Muscle Raw	4.00									0.70	
Shark, Cat <u>Scyliorhinus caniculus</u>	Muscle Raw										0.41 0.16-0.65 2	
Shark, Cat, Brown <u>Apristurus brunneus</u>	Muscle Raw Smoked								10.10		0.56 0.13	
Shark, Cat, Nurse Hound <u>Scyliorhinus stellaris</u>	Muscle Raw										1.88	
Shark, Cat, Squal <u>Galeus melanostomus</u>	Muscle Raw									6.11		
Shark, Darkie Charlie <u>Dalatius licha</u>	Muscle Raw										0.55	
Shark, Dusky <u>Carcharhinus obscurus</u>	Muscle Raw		5.07		1.60			0.56	0.40		1.60 1.12-2.08 2	

Table 16.--Microelement (Group 1) composition of finfishes, whales, and products.

Common and Scientific Name	Description	Iron	Zinc	Fluorine	Arsenic	Iodine	Lead	Cadmium	Copper	Man- gane- se	Mercury	Methyl- mercury
Shark, Greenland <u>Somniosus microcephalus</u>	Muscle Raw											1.72
Shark, Gummy <u>Mustelus antarcticus</u>	Muscle Raw	10.00	4.60					0.05	0.15 0.04-0.25 2	0.50		
	Canned											
	Boiled	40.00										
	Seasoned	60.00										
		40.00-80.00 2										
Shark, Hammerhead <u>Sphyrna blochii</u>	Muscle Raw	44.80										
Shark, Hammerhead <u>Sphyrna lewini</u>	Muscle Raw		3.76		0.55			0.03	0.50		1.86 0.68-3.64 3	
Shark, Hammerhead, Bonnethead <u>Sphyrna tiburo</u>	Muscle Raw		2.07		3.63			0.10	0.78		0.60	
Shark, Hammerhead Sphyrnidae	Muscle Raw									0.20		
Shark, Mushi <u>Scoliodon sorrakewa</u>	Muscle Salted & Dried	27.20										
Shark, Porbeagle, Mackerel <u>Lamna nasus</u>	Muscle Raw										1.60	
Shark, Requiem Carcharhinidae	Muscle Raw	14.00			4.50					0.20		
Shark, Sandbar <u>Carcharhinus milberti</u>	Muscle Raw										0.25	
Shark, Saw <u>Pristiophorus cirratus</u>	Muscle Raw		4.10					0.05	0.30	0.50		
Shark, School <u>Galeorhinus australis</u>	Muscle Raw		5.00					0.05	0.50	0.50	0.30	
Shark, Sevengill <u>Notorynchus cepedianus</u>	Muscle Raw		4.40					0.05	0.25	0.50		
Shark, Sharpnose, Pacific <u>Scoliodon longurio</u>	Muscle Raw	23.30 20.60-26.00 2										
Shark, Shortfin Mako <u>Isurus oxyrinchus</u>	Muscle Raw										1.35	
Shark, Silky <u>Carcharhinus falciformis</u>	Muscle Raw		2.77		0.28			0.28	0.58		1.45 1.43-1.47 2	
Shark, Sixgill <u>Hexanchus griseus</u>	Muscle Raw				4.10 3.20-4.60 3							

Table 16.--Microelement (Group 1) composition of finfish, whales, and products.

Common and Scientific Name	Description	Iron	Zinc	Fluorine	Arsenic	Iodine	Lead	Cadmium	Copper	Manganese	Mercury	Methylmercury
Parts Per Million (PPM)												
Shark, Thresher Alopiidae	Muscle Raw										0.66	
Shark, Tiger Galeocerdo arcticus	Muscle Raw										0.83	
Shark, Whitetip Carcharhinus albimarginatus	Muscle Raw										0.47	
Sheathfish Kryptopterus kryptopterus	Muscle Raw	10.00										
Sheathfish Tachysurus gambensis	Muscle Raw	2.00										
Sheathfish Tachysurus heudeloti	Muscle Raw	2.00										
Sheathfish Siluridae	Muscle Raw		18.60				0.02	0.03	1.73 1.00-2.46 2		0.01	
Shiner, Common Notropis cornutus	Muscle Raw										0.24	
Shiner, Emerald Notropis hudsonius	Muscle Raw								0.80			
	Whole Raw							0.10	1.20			
Shiner, Golden Notemigonus crysoleucas	Muscle Raw						0.22				0.12	0.39
	Whole Raw				0.79							
Shiner Cyprinidae	Muscle Raw										0.58 0.39-0.76 2	
Silverfish Dentex argyrozona	Muscle Raw					1.62						
Silverside Atherina boyeri	Muscle Raw		3.20				0.25	0.05	0.62		0.43	
Silverside Atherina presbyter	Muscle Raw	10.00										
Silverside Austromenidia regia	Muscle Raw	7.00										
Silverside, Brook Labidesthes sicculus	Muscle Raw				0.44							
Silverside, Cornalito Basilichthys incisus	Muscle Raw				0.27							
Silverside, Pejerrey Basilichthys bonariensis	Muscle Raw				0.24							

Table 16.--Microelement (Group 1) composition of finfishes, whales, and products.

Common and Scientific Name	Description	Parts Per Million (PPM)										
		Iron	Zinc	Fluorine	Arsenic	Iodine	Lead	Cadmium	Copper	Manganese	Mercury	Methylmercury
Skate, Blue <u>Raja batis</u>	Muscle Raw	10.00									0.42 0.04-0.80 2	
Skate, Clear Nose <u>Raja eglanteria</u>	Muscle Raw		4.64		4.41			0.14	0.74		0.30	
Skate, Roundel <u>Raja texana</u>	Muscle Raw	14.00										
Skate, Thornback <u>Raja clavata</u>	Muscle Raw		3.00			0.20					0.17	
Skate, Thorny <u>Raja radiata</u>	Muscle Raw										0.22 0.18-0.26,00 2	0.09
Skate Rajidae	Muscle Raw	7.50 5.00-10.00 2	9.80		16.20			0.47	0.10		0.80	
	Cooked Fried	12.00										
	Whole FPC			372.00								
Sleeper <u>Eleotris fusca</u>	Muscle Raw	26.00							3.60			
Slimy, Soapy, Ponyfish <u>Leiognathus equula</u>	Muscle Raw Dried	7.20 13.00	10.20				0.04	0.01	0.24		0.03	
Slimy, Ponyfish, Splendid <u>Leiognathus splendens</u>	Muscle Raw		9.90				0.09	0.02	0.62		0.02	
Slimy, Soapy Leiognathidae	Muscle Raw		8.30				0.08	0.04	0.31		0.07	
Slipmouth, Black-Finned <u>Leiognathus daura</u>	Muscle Raw	8.50 7.00-10.00 2										
Smelt, Blue <u>Atherinopsis californiensis</u>	Muscle Raw					0.32						
Smelt, Eulachon <u>Thaleichthys pacificus</u>	Muscle Raw					0.31						
Smelt, Lake <u>Osmerus mordax</u>	Muscle Raw		20.00		0.34 0.15-0.52 2	0.01	0.50	0.06 0.06-0.07 2	1.50		0.03 0.01-0.07 3	
Smelt, Longfin <u>Spirinchus thaleichthys</u>	Muscle Raw					0.31						
Smelt, Pond <u>Hypomesus olidus</u>	Muscle Raw	50.00										

Table 16.--Microelement (Group 1) composition of finfishes, whales, and products.

Common and Scientific Name	Description	Parts Per Million (PPM)										
		Iron	Zinc	Fluorine	Arsenic	Iodine	Lead	Cadmium	Copper	Manganese	Mercury	Methyl-mercury
Smelt, Sweet, Ayu <u>Plecoglossus altivelis</u>	Muscle Raw	20.00										
Smelt Osmeridae	Muscle Raw	34.10 18.20-50.00 2	11.60					0.00	3.30	0.28 0.26-0.30 2	0.17 0.06-0.42 5	
	Cooked Fried Floured	33.00										
Snapper <u>Chrysophrys guttulatus</u>	Muscle Raw	10.00							0.10			
Snapper <u>Lutianus agennes</u>	Muscle Raw	4.00										
Snapper <u>Pristipomoides sieboldi</u>	Muscle Raw											0.02
Snapper, Malabar <u>Lutianus malabaricus</u>	Muscle Raw	6.10									0.28	
Snapper, Red <u>Lutianus aya</u>	Muscle Raw		2.30									
Snapper, Red <u>Lutianus campechanus</u> (blackfordii)	Muscle Raw	10.79 10.00-11.58 2			0.41	0.31 0.30-0.32 3	0.48	0.06	0.20 0.02-0.38 2		0.60	
	Cooked Fried Battered	57.00										
Snapper Lutianidae	Muscle Raw	42.95 10.00-75.90 2				0.31 0.30-0.32 2			0.70	0.13	0.53	
Snipefish Macrorhamphosidae	Muscle Raw		1.92					0.00				
Snook <u>Centropomus undecimalis</u>	Muscle Raw	10.00							0.02			
Snook Centropomidae	Muscle Raw	3.00										
Soldier Fish <u>Gymnapistes marmoratis</u>	Muscle Raw		21.30					0.05	6.30	0.70		
Sole <u>Aesopia cornuta</u>	Muscle Raw	1.80	0.80									
Sole, Acedia <u>Decologlossa cuneata</u>	Muscle Raw										0.07	
Sole, Black <u>Synaptura nigra</u>	Muscle Raw	10.00							0.03			
Sole, Dover <u>Microstomus pacificus</u>	Muscle Raw						0.09 0.08-0.11 2					

Table 16.--Microelement (Group 1) composition of finfishes, whales, and products.

Common and Scientific Name	Description	Parts Per Million (PPM)										
		Iron	Zinc	Fluorine	Arsenic	Iodine	Lead	Cadmium	Copper	Manganese	Mercury	Methylmercury
Sole, Dover <u>Solea solea</u>	Muscle Raw	10.00	4.81 4.34-5.27 2		0.88	0.71 0.50-0.91 2	0.06	0.38 0.25-0.51 2			0.24 0.06-0.43 5	
Sole, English <u>Parophrys vetulus</u>	Muscle Raw					0.10	0.23 0.13-0.33 2				0.11	
Sole, Flathead <u>Hippoglossoides elassodon</u>	Muscle Raw					0.22						
Sole, Lenguado <u>Paralichthys adspersus</u>	Muscle Raw	17.20										
Sole, Lenguado <u>Paralichthys microps</u>	Muscle Raw			1.75								
Sole, Petrale <u>Eopsetta jordani</u>	Muscle Raw						0.07 0.04-0.09 2				0.11	
Sole, Rex <u>Glyptocephalus zachirus</u>	Muscle Raw						0.17 0.11-0.23 2				0.12	
Sole, Sand <u>Psettichthys melanostictus</u>	Muscle Raw					0.16	0.05				0.08	
Sole Soleidae/Pleuronectidae	Muscle Raw	6.56 3.30-10.00 7	3.78 3.10-4.23 3	0.40	1.10		3.00	0.01	2.80 0.11-6.00 3	0.20	0.15 0.04-0.29 4	
	Cooked											
	Fried											
	Battered & Breaded	12.50 11.00-14.00 2							1.60			
	Steamed	6.50 6.00-7.00 2							1.20			
	Eviscerated Raw									2.38		
Spadefish <u>Chaetodipterus faber</u>	Muscle Raw	16.40										
	Whole Raw	26.40	2.09							1.92		
Spadefish <u>Scatophagus argus</u>	Muscle Raw	21.72 7.00-66.00 5							0.10			
Spot <u>Leiostomus xanthurus</u>	Muscle Raw					0.59						

Table 16.--Microelement (Group 1) composition of finfishes, whales, and products.

Common and Scientific Name	Description	Parts Per Million (PPM)									
		Iron	Zinc	Fluorine	Arsenic	Iodine	Lead	Cadmium	Copper	Manganese	Mercury
Sprat <u>Sprattus sprattus</u>	Muscle										
	Raw	18.77	15.52		0.29				0.78	1.42	0.25
		7.50-30.04									
		2									
	Canned					0.25					
	In Oil	47.70							1.00		
		15.00-80.00									
		2									
	In Olive Oil					0.51					
	Smoked										
	In Oil	15.00				1.00					
	In Tomato										
	Sauce	2.70				0.50					
Squirrelfish, Mompoti <u>Myripristis argyromus</u>	In Tomato										
	Sauce					0.30					
	Whole										
	Raw	7.00				1.00			10.00		
	Cooked										
	Deep Fat										
	Fried	45.00									
	Grilled										
	(smoked)	57.00									
	Dried	22.00									
Stargazer <u>Uranoscopus scaber</u>	Fishmeal										0.15
	Muscle										
	Raw										0.21
											0.21
Steenbras, Red <u>Petrus rupestris</u>	Muscle										
	Raw					1.40					
						1.30-1.50					
Steenbras, Sand, Seebes <u>Lithognathus mormyrus</u>						2					
	Muscle										
	Raw					1.61					0.22
Stickleback, Ninespine <u>Gasterosteus pungitius</u>											0.11-0.34
	Muscle										3
	Raw										0.14
Stickleback Gasterosteidae	Muscle										
	Raw										0.02
Stingray <u>Dasyatis brevicaudatus</u>	Muscle										
	Raw		9.20					0.05	1.00	0.70	
Stingray, Butterfly <u>Pteroplatia altavela</u>	Muscle										
	Raw	4.00									
Stingray, Marbled <u>Dasyatis uarnak</u>	Muscle										
	Raw	27.40									
		8.70-61.50									
Stingray Dasyatidae											
	Muscle										
	Raw	4.50									0.25
		4.00-5.00									
		2									

Table 16.--Microelement (Group 1) composition of finfishes, whales, and products.

Common and Scientific Name	Description	Iron	Zinc	Fluorine	Arsenic	Iodine	Lead	Cadmium	Copper	Man- ganese	Mercury	Methyl- mercury
	Whole Raw		3.82						5.20			
Stockfish	Muscle											
<u>Merluccius capensis</u>	Raw				2.50		0.50				0.08	
	Dried										0.21	
	Salted, Dried & Soaked	18.00										
Stumpnose, Red	Muscle											
<u>Pagrus gibbiceps</u>	Raw					1.37 1.28-1.46 2						
Stumpnose, White	Muscle											
<u>Sparus globiceps</u>	Raw					1.35						
Sturgeon	Muscle											
<u>Acipenser sinensis</u>	Raw					1.12						
Sturgeon	Muscle											
<u>Acipenser sturio</u>	Cooked Steamed	20.00										
Sturgeon, Atlantic	Eviscerated, Beheaded											
<u>Acipenser oxyrinchus</u>	Raw							0.05 0.03-0.09 2				
Sturgeon, Green	Muscle											
<u>Acipenser medirostris</u>	Raw										0.26	
Sturgeon, Lake	Muscle											
<u>Acipenser fulvescens</u>	Raw										0.07	
Sturgeon, White	Muscle											
<u>Acipenser transmontanus</u>	Raw					0.63					0.21	
Sturgeon	Muscle											
Acipenseridae	Raw										0.54 0.34-0.73 2	
	Cooked In Aspic Steamed	20.00									0.47	
	Eviscerated											
	Raw						1.39 1.18-1.60 2					
Sucker, Buffalo	Muscle											
<u>Ictiobus cyprinellus</u>	Raw					0.02						
Sucker, Carp	Muscle											
<u>Carpiodes difformis</u>	Raw					0.03						
Sucker, Common	Muscle											
<u>Catostomus commersonii</u>	Raw						0.04 0.02-0.07 2				1.80 0.08-3.60 7	0.23

Table 16.--Microelement (Group 1) composition of finfishes, whales, and products.

Common and Scientific Name	Description	Iron	Zinc	Fluorine	Arsenic	Iodine	Lead	Cadmium	Copper	Manganese	Mercury	Methylmercury
Parts Per Million (PPM)												
	Eviscerated											
	Raw						0.65					
							0.18-1.05					
							7					
Sucker, Longnose	Muscle											
<u>Catostomus catostomus</u>	Raw										1.06	
Sucker, Quillback	Muscle											
<u>Carpiodes cyprinus</u>	Raw										1.32	
Sucker, Shorthead Redhorse	Muscle											
<u>Moxostoma macrolepidotum</u>	Raw										1.60	
Sucker, Silver Redhorse	Muscle											
<u>Moxostoma anisurum</u>	Raw										0.10	
Sucker, Smallmouth Buffalo	Muscle											
<u>Ictiobus bubalus</u>	Raw				0.57	0.02						
Sucker, Spotted	Muscle											
<u>Minytrema melanops</u>	Raw				0.17	0.01						
Sucker	Muscle											
Catostomidae	Raw										0.36	0.64
											0.04-0.83	
											11	
Sunfish, Bluegill	Muscle											
<u>Lepomis macrochirus</u>	Raw										0.26	
											0.05-0.46	
											2	
	Whole											
	Raw	27.30	4.47		0.42					1.11		
Sunfish, Crappie, Black	Eviscerated,											
<u>Pomoxis nigromaculatus</u>	Beheaded											
	Raw						0.45	0.01				
							0.30-0.60					
							2					
Sunfish, Crappie, White	Muscle											
<u>Pomoxis annularis</u>	Raw					0.01					0.31	
											0.03-0.58	
											2	
Sunfish, Largemouth Bass	Muscle											
<u>Micropterus salmoides</u>	Raw				0.30	0.03					0.24	
						0.01-0.05					0.12-0.45	
						2					14	
	Whole											
	Raw						0.45					
							0.40-0.50					
							2					
Sunfish, Pumpkinseed	Muscle											
<u>Lepomis gibbosus</u>	Raw										0.27	0.30
											0.12-0.40	
											3	
Sunfish, Redbreast	Muscle											
<u>Lepomis auitus</u>	Raw											0.29

Table 16.--Microelement (Group 1) composition of finfishes, whales, and products.

Common and Scientific Name	Description	Iron	Zinc	Fluorine	Arsenic	Iodine	Lead	Cadmium	Copper	Man- ganese	Mercury	Methyl- mercury
Sunfish, Rock Bass <u>Ambloplites rupestris</u>	Muscle Raw										0.21 0.05-0.34 3	
	Eviscerated & Beheaded Raw						0.09 0.60-1.20 6	0.03				
Sunfish, Smallmouth Bass <u>Micropterus dolomieu</u>	Muscle Raw										0.30 0.04-0.55 3	1.10
	Eviscerated & Beheaded Raw						0.79 0.60-1.20 20	0.02				
Sunfish, Spotted Bass <u>Micropterus punctulatus</u>	Muscle Raw										0.24	
Sunfish Centrarchidae	Raw	3.40							1.40	0.29	0.35 0.07-0.51 5	0.11
Surfperch, Black <u>Embiotoca jacksoni</u>	Muscle Raw					0.06						
Surfperch, Blue <u>Embiotoca lateralis</u>	Muscle Raw					0.06						
Surgeonfish <u>Acanthurus bleekeri</u>	Muscle Raw	4.95 4.90-5.00 2										
Swordfish <u>Xiphias gladius</u>	Muscle Raw				1.00		0.17	0.04			0.93 0.46-2.01 26	1.07 1.06-1.09 2
	FPC										5.69	
Swordfish Xiphiidae	Muscle Canned Cooked Broiled With Butter	12.94									1.80	
Tarpon, Bidbid <u>Elops hawaiiensis</u>	Muscle Raw	6.75 3.50-10.00 2										
Tarpon, Buan-Buan <u>Megalops cyprinoides</u>	Muscle Raw	6.17 4.90-7.00 2										

Table 16.--Microelement (Group 1) composition of finfishes, whales, and products.

Common and Scientific Name	Description	Iron	Zinc	Fluorine	Arsenic	Iodine	Lead	Cadmium	Copper	Manganese	Mercury	Methylmercury
		Parts Per Million (PPM)										
	Dried	34.00	56.00						8.00	14.00		
Tarpon	Muscle											
Elopidae	Raw		7.60									
	Whole											
	Raw								2.40			
Tench	Muscle											
<u>Tinca tinca</u>	Raw	10.00										
Teraglin, Geelbeck	Muscle											
<u>Atractoscion acquidens</u>	Raw				0.00		0.40		1.80			
Therapon	Whole											
<u>Therapon plumbeus</u>	Dried	202.00										
Therapon, Large Scaled, Banded												
Grunter	Muscle											
<u>Therapon theraps</u>	Raw	9.10										
Therapon, Tigerfish	Muscle											
<u>Therapon jarbua</u>	Raw	55.83										
		5.56-86.00										
		3										
Therapon	Muscle											
Theraponidae	Raw	8.00										
Threadfin	Muscle											
<u>Galeoides decadactylus</u>	Raw	3.00										
Threadfin	Muscle											
<u>Pentanemus quinquarias</u>	Raw	3.00										
Threadfin	Muscle											
<u>Polynemus indicus</u>	Raw	35.30										
		25.60-45.00										
		2										
	Whole											
	Dried	170.00							17.00			
Threadfin, Four-rayed	Muscle											
<u>Polynemus tetradactylus</u>	Raw	17.10										
Threadfin, Shiny Nose	Muscle											
<u>Polydactylus quadrifilis</u>	Raw	2.00										
Threadfin, Smallmouth	Muscle											
<u>Polynemus microstoma</u>	Raw	5.90										
Threadfin	Muscle											
Polynemidae	Raw	7.80							0.10			
		3.00-10.00										
		4										
Tilapia, Mozambique Mouthbrooder	Muscle											
<u>Tilapia mossambica</u>	Raw	4.00										
Tilefish	Muscle											
<u>Branchiostegus japonicus</u>	Raw		0.90			1.48						

Table 16.--Microelement (Group 1) composition of finfishes, whales, and products.

Common and Scientific Name	Description	Parts Per Million (PPM)										
		Iron	Zinc	Fluorine	Arsenic	Iodine	Lead	Cadmium	Copper	Manganese	Mercury	Methyl-mercury
Tilefish <u>Branchiostegidae</u>	Muscle											
	Raw	12.00										
		10.00-14.00										
		2										
Tomcod	Whole											
<u>Gadidae</u>	Raw			0.41								
Torpedo, Panga	Muscle											
<u>Megalaspis cordyla</u>	Raw	5.90										
		5.80-6.00										
		2										
Trevally	Muscle											
<u>Caranx georgianus</u>	Raw	10.00						4.00				
Trevally, Great, Talakitok	Muscle											
<u>Caranx sexfasciatus</u>	Raw	8.20										
	Dried	10.00										
Trevally, Mackerel	Muscle											
<u>Serrilela ameculita</u>	Raw		11.30					0.05	1.30	0.50		
Triggerfish, Leatherjacket	Muscle											
<u>Monacanthus chinensis</u>	Raw								0.61			
Triggerfish, Yellowjacket	Muscle											
<u>Pseudomonacanthus ayraudi</u>	Raw	10.00							0.04			
Triggerfish	Muscle											
<u>Balistidae</u>	Raw		7.00					0.05	0.70	0.70		
Tripletail	Whole											
<u>Lobotes surinamensis</u>	Dried	210.00							26.00			
Trout	Muscle											
<u>Salmo shasta</u>	Raw					0.04						
Trout, Brook	Muscle											
<u>Salvelinus fontinalis</u>	Raw				1.22	0.02		0.02			1.77	0.11
											0.20-3.33	
											2	
	Cooked											
	Unspecified					0.05						
	Whole											
	Raw										0.22	0.04
											0.02-0.37	
											3	
	Eviscerated											
	Raw											
								0.66				
								0.40-0.70				
								2				
Trout, Brown	Muscle											
<u>Salmo trutta</u>	Raw	10.00	4.60			0.03		0.03	2.10	0.50	0.53	
			4.00-5.20					0.01-0.05	0.90-3.30		0.06-4.35	
			2					2	2		13	
	Eviscerated											
	Raw							1.38				
Trout, Dolly Varden	Muscle											
<u>Salvelinus malma</u>	Raw										1.04	

Table 16.--Microelement (Group 1) composition of finfishes, whales, and products.

Common and Scientific Name	Description	Parts Per Million (PPM)										
		Iron	Zinc	Fluorine	Arsenic	Iodine	Lead	Cadmium	Copper	Manganese	Mercury	Methylmercury
Trout, Gila <u>Salmo gila</u>	Muscle Raw										0.07	
Trout, Lake <u>Salvelinus namaycush</u>	Muscle Raw	4.78 2.35-7.20 2	2.10		0.67	0.01 0.01-0.01 2	0.11	0.04	0.22 0.22-3.30 3	0.26	0.96 0.24-2.86 7	1.08
	Whole Raw										0.47 0.24-0.57 9	
	Eviscerated Raw						0.72 0.50-1.10 10	0.02				
	Muscle Raw					1.37						
Trout, Pollan <u>Coregonus pollan</u>	Muscle Raw											
	Muscle Raw	23.74 13.37-30.00 4	12.77		0.40	1.18 0.04-4.58 12		0.02	2.23	2.10	0.18 0.04-0.67 9	
	Canned					0.38 0.22-0.62 4						
	Whole Raw	33.92	117.68			1.19 1.08-1.40 3			3.88	7.70	0.04	0.04
	Eviscerated Raw						0.77 0.50-1.10 10					
Trout, Salmon <u>Trutta marina</u>	Muscle Raw					0.10						
Trout, Sea <u>Salma ocula</u>	Muscle Raw	4.90	4.22						0.50	0.22		
Trout, Yellowstone <u>Salmo lewisi</u>	Muscle Raw				2.40						0.03 0.03-0.04 2	
Trout Salmonidae	Muscle Raw	8.60 6.00-12.00 3	10.20		0.11	1.62 0.03-5.00 5			2.77 1.70-3.30 3		0.32 0.03-1.15 8	
	Cooked Steamed	10.00										
	Eviscerated Raw						0.50	0.01	1.80			

Table 16.--Microelement (Group 1) composition of finfishes, whales, and products.

Common and Scientific Name	Description	Parts Per Million (PPM)										
		Iron	Zinc	Fluorine	Arsenic	Iodine	Lead	Cadmium	Copper	Manganese	Mercury	Methyl-mercury
Trumpeter <u>Latridopsis forsteri</u>	Muscle Raw		8.10					0.05	0.60	0.50		
Tuna, Albacore <u>Thunnus alalunga</u>	Muscle Raw					0.45	0.03				0.20 0.13-0.27 2	
	Canned In Oil					0.32					0.30	
	In Oil											
	Drained In Water	6.00									0.43	
Tuna, Albacore Scombridae	Muscle Raw Canned										0.31 0.25	
Tuna, Bigeye <u>Thunnus obesus</u>	Muscle Raw	14.85 2.70-27.00 2	0.80							0.10	0.90 0.52-1.39 6	
Tuna, Bluefin <u>Thunnus thynnus</u>	Muscle Raw	15.00 10.00-20.00 3				0.23 0.08-0.38 2				0.29 0.08-0.50 2	0.64 0.37-0.91 11	0.36
	Canned					0.19 0.16-0.22 2						
Tuna, Skipjack <u>Euthynnus pelamis</u>	Muscle Raw	25.50 11.00-40.00 2									0.27 0.17-0.40 9	0.41
	Canned In Oil	30.00 40.00										
	Seasoned Dried	80.00 75.00 50.00-100.00 2										
Tuna, Skipjack Scombridae	Muscle Raw Canned In Oil Dried	40.00									0.20 0.16 0.64	
		75.00 50.00-100.00 2										
	Smoked										0.05	
Tuna, Yellowfin <u>Thunnus albacares</u>	Muscle Raw	27.04 10.00-80.00 5			0.38	0.56 0.34-0.99 3	0.85	0.05			0.34 0.12-0.77 22	0.48
	Canned In Oil	40.00 18.00										
Tuna Scombridae	Muscle Raw	10.00	11.33 5.26-17.40 2		0.58			0.14 0.07-0.20 2	0.11	5.00	0.47 0.20-0.97 7	0.96 0.24-1.68 2

Table 16.--Microelement (Group 1) composition of finfishes, whales, and products.

Common and Scientific Name	Description	Iron	Zinc	Fluorine	Arsenic	Iodine	Lead	Cadmium	Copper	Manganese	Mercury	Methylmercury
		Parts Per Million (PPM)										
Tunny, Little <u>Euthynnus alletteratus</u>	Canned	18.24	4.40			1.10	0.32	0.06	0.34	0.33	0.45	0.20
		12.00-25.50					0.11-0.52	0.06-0.06	0.11-0.50	0.20-0.45	0.20-1.24	
		9					2	2	2	2	14	
	In Bouillon	20.00				0.50						
	In Oil	16.46				0.50			1.66			
		12.00-23.00							1.00-2.32			
		4							2			
	In Oil											
	Drained	24.00										
	With Vegetables										0.48	
Tunny Scombridae	In Water	26.50							1.00			
		22.00-31.00							1.00-1.00			
		2							2			
	Offal											
	Fishmeal	368.00	213.00						11.00	9.00		
	Muscle											
		Raw	31.00	0.24		0.33			0.06	0.48	0.24	
	Muscle											
		Raw		4.60								
	Turbot <u>Reinhardtius hippoglossoides</u>	Muscle										
Raw		5.60							0.80		0.08	0.06
		3.20-8.00										
		2										
Eviscerated												
Raw		1.74	2.07						0.18	0.08		
Offal												
Fishmeal											0.21	
Muscle												
		Raw	9.50							1.25		0.10
									0.70-1.80			
									2			
Turbot, Arrowtooth <u>Atheresthes stomias</u>	Muscle											
	Raw	21.00							10.20	1.80	0.14	
Turbot Pleuronectidae											0.11-0.15	
											3	
	Muscle											
	Raw										0.20	
											0.18-0.21	
											2	
	Cooked											
	Steamed	5.00										
	Eviscerated											
	Raw				0.27							
Viperfish <u>Chauliodus sloani</u>	Muscle											
	Raw	3.45										
Walleye <u>Stizostedion vitreum vitreum</u>	Muscle											
	Raw						0.79	0.02			1.57	
							0.50-1.50				0.32-2.31	
							9				40	
Weakfish <u>Larimus peli</u>	Muscle											
	Raw	7.00										

Table 16.--Microelement (Group 1) composition of finfishes, whales, and products.

Common and Scientific Name	Description	Iron	Zinc	Fluorine	Arsenic	Iodine	Lead	Cadmium	Copper	Manganese	Mercury	Methyl-mercury
		Parts Per Million (PPM)										
Weever <u>Trachinus araneus</u>	Muscle Raw										2.04	
Whale, Pilot <u>Globicephala macrorhyncha</u>	Muscle Raw										3.99	2.35
Whale, Sperm <u>Phyester macrocephalus</u>	Muscle Raw					0.82						
Whale Unspecified	Muscle Raw		10.20					0.33			0.89 0.24-1.74 4	
	Canned Salted	51.60	5.90			0.01			6.80			
Whitefish <u>Coregonus oxyrhynchus</u>	Muscle Raw										0.03	
Whitefish, Lake <u>Coregonus clupeaformis</u>	Muscle Raw		13.00 12.00-14.00 2		0.40 0.09-0.70 2	0.03 0.20-0.50 3	0.40 0.20-0.50 3	0.05	0.72 0.50-0.94 2	0.67 0.66-0.69 2	0.41 0.05-2.27 9	
	Eviscerated Raw						0.84 0.65-1.40 6	0.04				
Whitefish, Mountain <u>Prosopium williamsoni</u>	Muscle Raw				2.70							
Whitefish, Vendace <u>Coregonus (leucichthys) albula</u>	Muscle Raw										0.45	
Whitefish Salmonidae	Muscle Raw	7.60 4.20-11.00 2	1.96				0.30 0.20-0.40 2		1.90		0.10 0.06-0.13 5	
	Offal Fishmeal	12.08				19.70			44.90	149.30		
Whiting, Australian <u>Sillago sihama</u>	Muscle Raw	9.45 8.90-10.00 2										
Whiting, Blue <u>Micromesistius poutassou</u>	Muscle Raw	10.00 1	4.39		0.50		1.14		0.48		0.33 0.03-0.79 5	
Whiting, Lady Vendi <u>Sillago schansa</u>	Muscle Raw	7.30							2.30			
Whiting, Spotted <u>Sillaginodes punctatus</u>	Muscle Raw		8.90					0.05	0.60	0.50		
Whiting Sillaginidae	Muscle Raw		7.93 1.92-21.80 4		0.49 0.25-0.73 2			0.05 0.01-0.09 2	0.90		0.17 0.07-0.27 2	

Table 16.--Microelement (Group 1) composition of finfishes, whales and products.

Common and Scientific Name	Description	Parts Per Million (PPM)										
		Iron	Zinc	Fluorine	Arsenic	Iodine	Lead	Cadmium	Copper	Manganese	Mercury	Methylmercury
	Cooked											
	Fried											
	Battered & Breaded	7.00										
	Steamed	10.00										
	Whole Raw								1.00			
Wolffish, Atlantic <u>Anarhichas denticulatus</u>	Muscle Raw	3.30	13.25			0.89	0.25	0.02	1.00		0.21 0.04-0.45 7	0.20 0.09-0.32 2
	Whole Fishmeal										0.10 0.04-0.19 7	
Wolffish, Spotted <u>Anarhichas minor</u>	Muscle Raw										0.06	
Wolffish Anarhichadidae	Whole Fishmeal										0.07	
Wrasse <u>Nemadactylus macropterus</u>	Muscle Raw		8.40					0.05	0.90	0.50		
Wrasse <u>Pimelometopon bulchar</u>	Muscle Raw					0.07						
Wrasse, California, Sheepshead <u>Pimelometopon pulchrum</u>	Muscle Raw					0.07						
Wrasse, Spinola <u>Labrus turdus</u>	Muscle Raw		4.00				0.50	0.05	0.25		0.42	
Wrasse, Tautog <u>Tautoga onitis</u>	Muscle Raw					0.27						
Wrasse Labridae	Muscle Raw		8.40					0.05	0.80	1.30		
Wreckfish, Black Bass <u>Polyprion americanus</u>	Muscle Raw	32.00	50.00						4.00	1.10		

1/ Average of the means obtained from the literature cited.

2/ Range of the means found in literature cited.

3/ Number of mean values, which were reported in the literature cited.

4/ Method of processing was not clearly described or the fish was identified only by common name.

Table 17.--Microelement (Group 1) composition of crustaceans and products.

Common and Scientific Name	Description	Iron	Zinc	Fluorine	Arsenic	Iodine	Lead	Cadmium	Copper	Man- ganese	Mercury	Methyl- mercury
Crab <u>Atelecyclus septemdentatus</u>	Muscle Raw		61.00						2.90			
	Whole Raw		32.00						10.00			
Crab <u>Callinectes hastatus</u>	Muscle Raw		26.96						2.96			
Crab <u>Corystes cassivelaunus</u>	Muscle Raw		52.00						6.60			
	Whole Raw		39.00						22.00			
Crab <u>Polybius henslowi</u>	Whole Raw	25.20										
Crab <u>Portunus sanguinalentus</u>	Muscle Raw	18.50							18.50			
	Offal Meal	155.00							32.20	400.00		
Crab <u>Portunus trituberculatus</u>	Muscle Raw	2.53										
Crab <u>Xantho incisus</u>	Whole Raw		26.00						20.00			
Crab, Blue <u>Callinectes sapidus</u>	Muscle Raw	23.17 ^{1/} 2.00-54.40 ^{2/} 6	40.25 ^{1/} 34.50-49.00 ^{2/} 2	1.28	0.20 ^{1/} 0.09-0.46 ^{2/} 2	0.79	0.10	9.36 ^{1/} 1.30-19.00 ^{2/} 6	1.70	0.07		
	Canned	11.93 11.56-12.31 2						9.36 9.08-9.14 2				
	Cooked Steamed	16.69 7.64-22.62 3			0.30 0.15-0.46 4			10.83 3.68-15.82 3				
Crab, Blue, Deep Sea <u>Portunus pelagicus</u>	Muscle Raw	19.10							15.00		0.02	
Crab, Chinese <u>Eriocheia sinensis</u>	Muscle Raw	28.24										
Crab, Dungeness <u>Cancer magister</u>	Muscle Raw	3.65	37.65		7.00	0.10			13.08 4.65-21.50 2	0.55	0.40 ^{1/} 0.12-0.67 ^{2/} 2	
	Canned	44.25 9.00-88.50 2			0.71		0.17		11.12 3.25-19.00 2			
	Whole Raw		27.00						20.00			
Crab, Edible <u>Cancer pagurus</u>	Muscle Raw		53.79 43.59-64.00 2				0.45	4.15 ^{1/} 2.93-5.00 ^{2/} 3	15.63 7.50-23.77 2			
	Canned	9.00						3.05				
	Cooked Boiled		20.00			0.40			10.00	0.30		
	Unspecified- Paste	4/			15.52			1.66				

Table 17.--Microelement (Group 1) composition of crustaceans and products.

Common and Scientific Name	Description	Parts Per Million (PPM)										
		Iron	Zinc	Fluorine	Arsenic	Iodine	Lead	Cadmium	Copper	Manganese	Mercury	Methyl-mercury
Crab, Hermit <u>Clibanarius strigimans</u>	Muscle Raw		74.30					0.05	15.80	0.80		
Crab, Hermit <u>Eupagurus bernhardus</u>	Muscle Raw		30.00						6.90			
	Whole Raw		28.00						25.00			
Crab, Hermit <u>Hermit eupagiorus</u>	Muscle Raw		93.60						2.06			
Crab, Keganian <u>Eramacrus isenbecki</u>	Muscle Raw		36.60					0.03				
Crab, King <u>Paralithodes camtschatica</u>	Muscle Raw	20.00			3.81	0.36	0.45	0.12			0.07	
	Canned	30.66							33.70			
		13.00-60.00 3										
	Cooked Unspecified				4.03		0.41	0.07			0.07	
	Offal Meal	375.00	251.00						111.00	11.87 1/ 11.75-12.00 2/ 2 2/		
Crab, Necora, Cangrejos <u>Cancer polydon</u>	Muscle Cooked Baked	39.00										
Crab, Red <u>Podaphehalmus vigil</u>	Muscle Cooked Boiled	27.00										
Crab, Red, Deep Sea <u>Geryon quinqueedens</u>	Muscle Raw										0.34	
Crab, Rock <u>Cancer irroratus</u>	Muscle Raw	60.00	30.50						19.90	10.60	0.12	0.11
Crab, Samoan <u>Scylla serrata</u>	Muscle Raw	21.40 8.80-41.20 2							22.00			
Crab, Sand <u>Platyonichus ocellatus</u>	Muscle Raw	15.00				0.46			12.00			
Crab, Shore, Common, Green <u>Carcinus maenas</u>	Muscle Raw		44.00					22.40	69.35 5.70-133.00 2			
	Cooked Unspecified				4.78							
	Dried				25.80							
	Whole Raw		23.25 22.00-24.50 2						22.00			
Crab, Small <u>Potamon grapsoides</u>	Muscle Raw	10.50										
Crab, Spinous Spider <u>Maia squinado</u>	Muscle Raw		63.00						3.20			

Table 17.--Microelement (Group 1) composition of crustaceans and products.

Common and Scientific Name	Description	Iron	Zinc	Fluorine	Arsenic	Iodine	Lead	Cadmium	Copper	Man- ganese	Mercury	Methyl- mercury
Crab, Swimming <u>Portunus puber</u>	Whole Raw		21.00						25.00			
	Muscle Raw		21.50						7.75			
	Dried			43.75								
Crab, Tanner <u>Chionoectes angulatus</u>	Whole Raw		24.50						19.50			
	Muscle Raw	20.00							10.00			
Crab Unspecified	Muscle Raw	52.00 8.00-212.00 7	28.27 14.00-81.00 5		16.25 ^{1/} 6.90-34.25 ^{2/} 32 ^{3/}	0.83 0.02-1.50 4	2.27 ^{1/} 3.00-4.25 ^{2/} 23 ^{3/}	0.06	5.68 3.25-8.90 4	0.30	0.18 0.09-0.30 3	
	Canned	7.48 4.80-9.40 3	36.00	2.00	0.71	0.50 0.33-0.74 3	1.08 0.17-2.00 2	0.12	5.88 2.42-15.20 4	0.20		
	Cooked											
	Boiled	13.00										
	Steamed	29.00 25.10-32.90 2		36.80			0.06	0.12	8.60	3.00		
	Dried	17.00										
	Salted	24.00 17.00-29.00 3	14.00									
	Paste	31.00				1.50						
	Whole Raw								5.75			
	Offal Meal	10.60				37.72 19.44-56.00 2				240.00 180.00-300.00 2		
Crayfish <u>Astacus fluviatilis</u>	Muscle Raw	18.35 10.00-26.70 2	17.50			0.90			7.30 4.60-10.00 2	0.30	0.14	
	Muscle Raw	11.78 11.50-12.00 4							3.90			
Crayfish <u>Austropotamobius pellipes</u>	Whole Raw		24.30 24.00-24.50 3						17.00			
	Whole Raw		14.00 10.00-18.00 2						34.50 29.00-40.00 2			
Crayfish <u>Porcellana platycheles</u>	Whole Raw		54.00						27.00			
Crayfish, Painted <u>Panulirus ornatus</u>	Muscle Raw	28.80										

Table 17.--Microelement (Group 1) composition of crustaceans and products.

Common and Scientific Name	Description	Iron	Zinc	Fluorine	Arsenic	Iodine	Lead	Cadmium	Copper	Manganese	Mercury	Methyl-mercury
		Parts Per Million (PPM)										
Crayfish Unspecified	Muscle Raw	131.41 9.00-373.00 3	16.38		0.02		11.60		24.60 7.00-11.21 3	5.74 4.20-7.28 2		
	Whole Raw				0.45					101.27		
Lobster <u>Homarus vulgaris</u>	Muscle Raw		34.00 14.30-51.75 8				0.28	0.08	9.10 5.70-12.03 3	0.80		
	Cooked					13.75						
	Whole Raw		22.50 22.00-23.00 2						33.00	63.20		
	Muscle Raw				35.00							
Lobster, Northern <u>Homarus americanus</u>	Muscle Raw					1.38					0.51	
	Canned	8.11			0.95		1.03		12.67			
Lobster, Norway <u>Nephrops norvegicus</u>	Muscle Raw	23.30 16.60-30.00 2	13.25 11.05-18.00 4		27.90 13.30-42.50 2		0.66 0.10-1.16 4	0.04 0.01-0.08 4	4.94 3.50-6.85 4		0.38 0.05-0.70 5	
	Cooked Unspecified				11.49							
						0.57 0.32-0.82 2						
Lobster, Red <u>Jasus lalandi</u>	Muscle Raw	10.00							10.00			
Lobster, Slipper <u>Ibacus ciliatus</u>	Muscle Raw										0.03	
Lobster, Spiny <u>Panulirus interruptus</u>	Muscle Raw					0.57 0.32-0.82 2						
Lobster, Spiny <u>Panulirus vulgaris</u>	Muscle Raw	3.72 2.84-4.60 2	0.48		31.29				0.98 0.25-1.70 2	0.03		
	Cured				5.30							
	Muscle Raw	15.68 3.00-60.00 5	8.24 1.48-15.00 2		4.90 4.80-5.00 2	1.38	1.83 0.00-3.98 3	0.14 0.12-0.17 2	34.90 0.51-167.00 7	1.09 0.37-2.50 3	0.10 0.04-0.14 3	
	Canned	8.10 8.00-8.20 2	23.23 20.96-25.50 2		12.61 1.00-24.22 2	1.33	0.93 0.09-1.06 2	0.29 0.12-0.47 2	9.15 8.70-9.60 2	0.40		
	Cooked Boiled Dried	8.50			29.50					0.38		
	Whole Raw Meal		22.00			42.41			67.13	59.46		

Table 17.--Microelement (Group 1) composition of crustaceans and products.

Common and Scientific Name	Description	Iron	Zinc	Fluorine	Arsenic	Iodine	Lead	Cadmium	Copper	Manganese	Mercury	Methyl-mercury
		Parts Per Million (PPM)										
Shrimp <u>Artemisia longinarius</u>	Muscle Raw	10.26					0.70	0.07	2.95		0.43	
Shrimp <u>Crangon vulgaris</u>	Muscle Raw	7.00	14.00			0.70			4.20	1.47	7.36	
	Whole Raw		34.00						32.00			
Shrimp <u>Palaemon serratus</u>	Muscle Cooked				1.96							
	Whole Raw		15.50 10.00-21.00 2						16.75 3.50-30.00 2			
Shrimp <u>Palaemon squilla</u>	Whole Raw		30.00						31.00			
Shrimp <u>Penaeus incisipes</u>	Muscle Raw	14.80 11.40-18.20 2										
Shrimp <u>Penaeus kerathurus</u>	Muscle Raw										0.14 0.10-0.17 2	
Shrimp <u>Penaeus semisulcatus</u>	Muscle Raw	69.20	13.60				0.22	0.01	3.40			0.02
Shrimp <u>Trachypenaeus asper</u>	Muscle Raw	18.00										
Shrimp, Bagda <u>Palaemon carcinus</u>	Muscle Raw		6.90									
Shrimp, Banana <u>Penaeus merguensis</u>	Muscle Raw		8.50				0.04	0.05	2.80			
Shrimp, Blue Leg King <u>Penaeus latisulcatus</u>	Muscle Raw		13.40					0.19	3.40		0.05	
Shrimp, Brazilian <u>Penaeus braziliensis</u>	Muscle Raw Cooked Boiled	21.88 39.73				0.23 0.21			3.31 3.02			
Shrimp, Brine <u>Artemia salina</u>	Muscle Raw	2750.00	80.00						10.00	130.00		
Shrimp, Brown <u>Penaeus aztecus</u>	Muscle Raw	17.80	15.50		4.40		0.48	0.05	4.00	1.20	0.07	
Shrimp, Charigo Blanco <u>Aristeus antennatus</u>	Muscle Raw										0.23	
Shrimp, Charigo Rajo <u>Plesiopenaeus edwardsianus</u>	Muscle Raw										0.50	
Shrimp, Dock <u>Pandalus danae</u>	Muscle Raw					0.38						

Table 17.--Microelement (Group 1) composition of crustaceans and products.

Common and Scientific Name	Description	Iron	Zinc	Fluorine	Arsenic	Iodine	Lead	Cadmium	Copper	Man- ganese	Mercury	Methyl- mercury
Shrimp, Fresh Water Prawn <u>Macrobrachium rosenbergii</u>	Muscle Raw		13.50				0.16	0.10	7.20			0.06
Shrimp, Fresh Water Unspecified	Muscle Raw	22.35 22.00-22.50 2										
	Salted & Dried	79.00										
	Soaked	24.00										
	Paste	380.00										
Shrimp, Gamba <u>Penaeus longirostris</u>	Muscle Cooked Unspecified	18.15 14.00-22.30 2			12.70 11.50-13.90 2				6.50			0.22
Shrimp, Indian <u>Hippolysmeta ensirostris</u>	Muscle Raw	95.84	18.65						48.69 13.07-84.31 2			
Shrimp, Indian <u>Metapenaeus monoceros</u>	Muscle Raw	85.04							91.88			0.02
Shrimp, Indian <u>Palaemonetes vulgaris</u>	Offal Meal					0.02						
Shrimp, Indian <u>Penaeus carinatus</u>	Muscle Raw	50.32 10.94-89.70 2							73.12			
Shrimp, Indian <u>Penaeus penicillatus</u>	Muscle Raw	116.00							131.00			
Shrimp, Indian <u>Solenocera subnuda</u>	Muscle Dried					1.02						
Shrimp, Indian <u>Squilla mantis</u>	Muscle Raw	4.40	21.99 16.98-27.00 2			0.37	0.92	0.42	18.09 14.18-22.00 2	0.40		0.21 0.12-0.30 2
Shrimp, Indian Prawn <u>Metapenaeus affinis</u>	Muscle Raw	91.20							90.48			0.24
Shrimp, Indian Prawn <u>Metapenaeus brevicornis</u>	Muscle Raw	79.72							72.27			
Shrimp, Indian Prawn <u>Penaeus maxillipedo</u>	Muscle Raw	135.04							110.32			
Shrimp, Indian Prawn <u>Penaeus sculptilus</u>	Muscle Raw	69.60 50.60-88.60 2							75.09			
Shrimp, Indian Prawn <u>Penaeus styliferus</u>	Muscle Raw	23.31 9.52-37.10 2							10.22			
Shrimp, Indian Prawn <u>Penaeus tenuipes</u>	Muscle Raw	104.52							84.73			

Table 17.--Microelement (Group 1) composition of crustaceans and products.

Common and Scientific Name	Description	Iron	Zinc	Fluorine	Arsenic	Iodine	Lead	Cadmium	Copper	Manganese	Mercury	Methylmercury
		Parts Per Million (PPM)										
Shrimp, Jumbo <u>Penaeus monodon</u>	Muscle											
	Raw	29.70	19.20				0.04	0.12	5.40		0.03	
		12.80-46.60										
		2										
Shrimp, Langostino <u>Hymenopenaeus mulleri</u>	Muscle				1.26							
	Raw											
Shrimp, Opossum, Kuruma <u>Penaeus japonicus</u>	Muscle											
	Raw	40.00										
	Dried	140.00										
Shrimp, Pink <u>Penaeus duorarum</u>	Muscle								1.30			
	Raw	2.30										
Shrimp, Pink, Maine <u>Pandalus borealis</u>	Muscle											
	Raw	3.50	14.00	6.00			0.34	0.07	2.00		0.07	
							0.20-0.39				0.02-0.15	
							2				4	
	Offal											
	Meal										0.06	
Shrimp, Sea Bob <u>Xiphopenaeus kroyeri</u>	Muscle											
	Raw	21.50										
Shrimp, Tiger <u>Penaeus esculentus</u>	Muscle											
	Raw	50.00										
Shrimp, White <u>Penaeus indicus</u>	Muscle											
	Raw	25.37							85.56	0.59		
		4.30-101.50							75.82-92.60			
		4							3			
	Salted & Fermented	54.00										
Shrimp, White <u>Penaeus setiferus</u>	Muscle											
	Raw				3.80	0.45	0.52	0.07			0.10	
					3.00-4.60		0.47-0.56	0.05-0.08			0.07-0.13	
					2		2	2			2	
	Canned	22.90			0.08		0.48		2.77			
		15.50-35.00										
		5										
Shrimp Penaeidae	Muscle											
	Raw	19.00							0.10		0.05	
											0.03-0.08	
											4	
	Canned	18.25		0.93							0.05	
		15.00-21.50									0.04-0.06	
		2									2	
	Dried	46.00										
	Salted	49.00										
	Salted & Dried	34.80										
	Paste	148.00										
Shrimp Unspecified	Muscle											
	Raw	19.78	21.02	0.93	15.16	0.90	0.42	2.10	8.26	0.73	0.03	
		7.00-40.00	7.32-42.00			0.45-1.50	0.38-0.48	0.03-4.14		0.02-1.90	0.01-0.09	
		15	6			4	3	4		4	6	
	Canned	23.96	16.95	4.40	8.75	0.37	0.32	0.08	1.70	0.20	0.90	0.70
		12.78-35.00	14.90-19.00		0.79-19.60	0.25-0.49	0.30-0.34	0.02-0.13				
		8	2		3	3	2	2				
	Cooked											
	Boiled	15.00	44.93	3.10	0.90			0.10	7.00	0.30		
			17.50-72.35						3.00-10.00			
			2						3			
	Dried	98.64					7.50					
		57.20-214.00										
		5										
	Fried	62.00										
	Salted & Dried	85.00										
		49.00-141.20										
		2										
	Whole											
	Raw	237.27							13.00			
	Dried	80.00										

1/ Average of the means obtained from the literature cited.

2/ Range of the means found in literature cited.

3/ Number of mean values, which were reported in the literature cited.

4/ Method of processing was not clearly described or the fish was identified only by common name.

Table 18.--Microelement (Group 1) composition of mollusks and products.

Common and Scientific Name	Description	Iron	Zinc	Fluorine	Arsenic	Iodine	Lead	Cadmium	Copper	Manganese	Mercury	Methylmercury
Abalone	Muscle											
<u>Haliotis cracherodi</u>	Raw		24.12									
Abalone	Muscle											
<u>Haliotis gigantea</u>	Raw		21.00							0.50		
	Canned	168.69 ^{1/} 18.00-400.00 ^{2/} 3 ^{3/}										
Abalone	Muscle											
<u>Haliotis japonica</u>	Raw	30.00										
Abalone	Muscle											
<u>Haliotidae</u>	Raw	20.60 7.90-30.00 3	14.20 ^{1/} 7.17-21.30 ^{2/} 2 ^{3/}			1.05		0.05				
	Canned											
	Boiled	18.00										
	Seasoned	4/40.00										
	Unspecified	4/23.12										
		18.00-28.24										
		2										
	Dried	50.50										
		30.00-71.00										
		2										
Clam, Arkshell	Muscle											
<u>Anadara broughtoni</u>	Raw									0.50		
Clam, Arkshell	Muscle											
<u>Arca granosa</u>	Raw		16.20				0.18	0.28	5.60			
Clam, Arkshell	Muscle											
<u>Arca noae</u>	Raw	387.00	53.20						1.15	1.63		
Clam, Arkshell	Muscle											
<u>Arcidae</u>	Raw	62.70 52.00-91.78 4								0.50		
	Canned	30.00										
		20.00-40.00										
		2										
	Seasoned	40.00										
Clam, Donax, Bean	Whole											
<u>Donax radians</u>	Raw								0.65			
Clam, Donax, Cadelinha	Whole											
<u>Donax trunculus</u>	Raw				2.63							
Clam, Donax	Whole											
<u>Donacidae</u>	Raw	16.20 16.00-16.40 2										
Clam, Fresh Water	Whole											
<u>Corbicula atrata</u>	Raw		30.00					0.39				
Clam, Fresh Water	Whole											
<u>Ellystis complanatus</u>	Raw									2.00		
Clam, Fresh Water, Corbshell	Whole											
<u>Corbicula japonica</u>	Raw									10.00		

Table 18.--Microelement (Group 1) composition of mollusks and products.

Common and Scientific Name	Description	Iron	Zinc	Fluorine	Arsenic	Iodine	Lead	Cadmium	Copper	Man- ganese	Mercury	Methyl- mercury
Clam, Fresh Water Unspecified	Whole Raw									10.00		
Clam, Green <u>Cyrena ventricosa</u>	Muscle Raw	32.15 24.30-40.00 2										
Clam, Mactra <u>Mactra glauca</u>	Muscle Raw										0.15	
Clam, Mactra <u>Mactra sulcataria</u>	Muscle Raw	100.00								20.00		
Clam, Mactra Mactridae	Muscle Raw	122.50 115.00-130.00 2					4.27 ^{1/} 1.17-7.37 ^{2/} 2 ^{2/}		0.92 ^{1/} 0.73-1.11 ^{2/} 2 ^{2/}	0.20	0.83 ^{1/} 0.82-0.84 ^{2/} 2 ^{2/}	
Clam, Razor <u>Solen marginatus</u>	Whole Raw Cooked				3.27 2.04						0.11	
Clam, Razor, Northern <u>Siliqua patula</u>	Whole Raw	16.00				1.38						
Clam, Razor Solenidae	Whole Raw Canned Chowder	110.00 37.50 5.00-70.00 2 34.25 11.00-58.00 4	63.25 20.00-80.00 4		0.90		0.42		4.50 1.90-7.10 2		0.05	0.06
	Whole Raw		35.00			2.15		0.12	3.65	9.25		
Clam, Soft Shell <u>Mesodesma globrata</u>	Whole Raw	405.00	17.00			0.70		0.27	5.80	6.70		
Clam, Soft Shell <u>Mesodesma mesodesma</u>	Whole Raw					12.72						
Clam, Soft Shell <u>Mya arenaria</u>	Whole Raw Canned	405.00 64.10	17.00		1.23 0.48	90.00 0.72 ^{1/} 0.36-1.08 ^{2/} 2 ^{2/}	0.55 0.40-0.70 2 0.81	0.22 ^{1/} 0.18-0.27 ^{2/} 2 ^{2/}	5.80 2.46	6.70	0.04 0.03-0.05 2	
Clam, Tellin, Rayed-Shell <u>Soletellina psammatea</u>	Whole Raw	85.80										
Clam, Tellin Tellinidae	Whole Raw	86.00										
Clam, Venus <u>Chione undatella</u>	Whole Raw								1.60			
Clam, Venus <u>Meretrix casta</u>	Whole Raw	93.40							10.40			

Table 18.--Microelement (Group 1) composition of mollusks and products.

Common and Scientific Name	Description	Iron	Zinc	Fluorine	Arsenic	Iodine	Lead	Cadmium	Copper	Man- ganese	Mercury	Methyl- mercury
Clam, Venus <u>Tapes aureus</u>	Whole Raw		17.00									
Clam, Venus <u>Tapes pullastra</u>	Whole Dried				25.60							
Clam, Venus <u>Tivela crassatelloides</u>	Whole Canned								2.20			
Clam, Venus <u>Venus gallina</u>	Whole Raw	218.10 32.20-404.00 2	27.90						0.89 0.30-1.47 2	1.57		
Clam, Venus, Asari <u>Tapes philippinarum</u>	Whole Raw										0.01	
Clam, Venus, Hard <u>Venus lusoria</u>	Whole Raw	41.40								1.35		
Clam, Venus, Littleneck <u>Venus kenneottii</u>	Whole Raw		5.09									
Clam, Venus, Littleneck Japanese <u>Tapes (Venerupis) decussatus</u>	Whole Raw Canned Seasoned	54.09 25.70-98.00 4 80.00	35.00		5.60 1.20-3.06 2	2.13 1.20-3.06 2			10.50 1.00-20.00 2	1.09	0.17 0.08-0.30 3	
Clam, Venus, Littleneck, Pacific <u>Paphia staminea</u>	Whole Raw					0.22			2.05			
Clam, Venus, Northern Quahog, Cherrystone <u>Mercenaria mercenaria</u>	Whole Raw Canned	30.00 63.00	20.60		1.77 0.14-0.18 2	0.16 0.14-0.18 2	0.88 0.28-1.83 3	0.16 0.12-0.73 2	6.33 2.60-10.07 2	2.57 ^{1/2} 0.02-5.80 33/	0.07 0.06-0.08 2	
Clam, Venus, Pismo <u>Tivela stultorum</u>	Whole Raw Canned		14.91						0.00			
Clam Veneridae	Whole Raw Canned Seasoned Cooked Steamed Paste	69.01 42.50-130.00 6 61.18 41.18-80.00 3 80.00	30.09 15.90-77.00 7		1.28 ^{1/2} 0.36-2.58 3	1.37 ^{2/3}	0.48 0.15-0.81 2	0.02 0.03-0.40 7	2.50 1.90-3.10 3	27.90	0.06 0.04-0.07 3	
Cockle <u>Cardium tuberculatum</u>	Whole Raw Cooked		14.00						0.31 0.83			

Table 18.--Microelement (Group 1) composition of mollusks and products.

Common and Scientific Name	Description	Iron	Zinc	Fluorine	Arsenic	Iodine	Lead	Cadmium	Copper	Man- ganese	Mercury	Methyl- mercury
Cockle, Atlantic <u>Cardium edule</u>	Muscle											
	Raw	24.15 9.30-39.00 2			7.30	1.50			1.00		0.05 0.04-0.07 3	
Cockle, Pacific <u>Cardium corbis</u>	Whole											
	Raw									1.63		
Cockle, Sand <u>Hemidonax donaciformus</u>	Muscle											
	Raw	28.00										
Cockle Cardiidae	Muscle											
	Raw	78.00			19.12					2.00		
	Canned											
	With Soybean											
	Sauce	265.00										
	Dried	247.00					5.50					
		234.00-260.00 2										
Cuttlefish <u>Sepia officinalis</u>	Muscle											
	Raw		12.80 12.25-13.35 2		8.17	1.33	0.92 0.85-0.99 2	0.11	2.73 2.66-2.81 2	1.10	0.40 0.09-0.51 4	
Cuttlefish <u>Sepia orientalis</u>	Muscle											
	Raw	110.00										
Cuttlefish <u>Sepiola rondetti</u>	Muscle											
	Raw										0.24	
Cuttlefish Sepiidae	Muscle											
	Raw	22.64 8.00-49.00 3	7.05 7.00-7.10 2			1.96			4.20			
	Canned											
	Salted	16.00										
	Dried	21.86 19.00-24.71 2	10.20								0.31	0.21
Mussel <u>Mytilus magallanicus</u>	Whole											
	Raw	10.00			19.74				20.00	0.80		
Mussel <u>Mytilus viridis</u>	Whole											
	Raw		14.20				0.11	0.38	7.30		0.02	
Mussel <u>Unio sinatus</u>	Whole											
	Raw									74.10		
Mussel, Blue <u>Mytilus edulis</u>	Whole											
	Raw	108.38 5.90-240.00 6	39.50 2.00-85.00 5	29.00	1.03 1.09-1.70 3	1.13 0.35-1.90 2	0.66 0.06-1.54 4	2.70 0.41-5.50 3	6.75 1.25-32.00 7	34.15 1.50-159.00 5	0.30 0.01-0.64 6	
	Canned	248.00	127.00	42.00	1.80		0.34	2.90	7.80	169.00	0.02	
	Cooked											
	Steamed	286.00	101.50	35.00	1.70		0.39	2.55	5.30	158.00	0.01	
Mussel, California <u>Mytilus californianus</u>	Whole											
	Raw		44.85			0.80			3.56			
Mussel, Cholga <u>Aulacomya ater</u>	Whole											
	Raw		2.22									

Table 18.--Microelement (Group 1) composition of mollusks and products.

Common and Scientific Name	Description	Iron	Zinc	Fluorine	Arsenic	Iodine	Lead	Cadmium	Copper	Manganese	Mercury	Methylmercury
Parts Per Million (PPM)												
Mussel, European <u>Mytilus galloprovincialis</u>	Whole Raw										0.89 0.28-1.50 2	
Mussel, Horse <u>Volselfa modiotus</u>	Whole Raw										0.04	
Mussel Mytilidae	Whole Raw	169.50 58.00-382.50 4	36.33 20.00-45.00 3		41.46 2.90-61.00 3	0.90	3.08 2.40-3.75 2	0.15	9.50 0.72-32.00 4	4.36 3.10-5.50 4	0.11	
	Canned											
	Cooked					0.97						
	Boiled	135.00										
	Fried					7.00						
	Dried	364.00					15.00					
Octopus <u>Eledone moschata</u>	Muscle Raw										0.40	
Octopus <u>Octopus bimaculatus</u>	Muscle Raw				0.12							
Octopus <u>Paroctopus hongkongensis</u>	Muscle Raw					0.23						
Octopus <u>Polypus marmoratus</u>	Muscle Raw					0.83						
Octopus, Curled <u>Eledone cirrhosa</u>	Muscle Raw										0.25	
Octopus, Devilfish <u>Octopus vulgaris</u>	Muscle Raw	48.03 5.10-130.00 3			14.48				37.40		0.32	
	Cooked											
	Unspecified				40.30							
	Cured				10.84							
	Dried	31.00										
Octopus, Pulpo <u>Octopus tehuelehus</u>	Muscle Raw				2.42							
Octopus Octopodidae	Muscle Raw	12.66 3.00-25.00 3	17.35 16.60-748.70 2					0.03 0.01-0.05 2	7.00	0.25 0.01-0.06 3		
Oyster <u>Ostrea circumpicta</u>	Whole Raw								93.13			
Oyster <u>Ostrea pulchana</u>	Whole Raw				0.77							
Oyster <u>Ostrea spinosa</u>	Whole Raw								75.45			
Oyster, Common <u>Ostrea edulis</u>	Whole Raw	35.32 6.90-60.00 4	382.65 16.60-748.70 2		1.14				303.10 0.20-606.00 2	2.13 1.01-3.25 2	0.11	

Table 18.--Microelement (Group 1) composition of mollusks and products.

Common and Scientific Name	Description	Iron	Zinc	Fluorine	Arsenic	Iodine	Lead	Cadmium	Copper	Man- ganese	Mercury	Methyl- mercury
	Cooked Steamed Dried	45.00	175.00		17.35	0.18	206.00		90.00	5.00		
Oyster, Dredged <u>Ostrea senuata</u>	Whole Raw		1.72				1.00	23.00				
Oyster, Eastern <u>Ostrea virginica</u>	Whole Raw	65.65 33.00-101.60 4	1383.40 170.00-2179.30 5		0.86 0.74-1.00 3	0.31 0.12-0.49 3	0.93 0.47-1.64 3	2.79 2.26-2.61 5	76.00 32.80-195.30 9	4.30 0.05-0.10 2	0.08	
	Canned	60.00 36.00-84.00 2	202.10									
	Dried	421.80	2600.00						97.30	34.70		
Oyster, Giant Pacific <u>Ostrea gigas</u>	Whole Raw	62.25	186.90			0.56 0.33-0.80 2			117.26 12.34-377.40 4			
	Canned Smoked	37.30			1.00		0.33		16.00			
Oyster, Native Pacific <u>Ostrea lurida</u>	Whole Raw	103.29				0.64 0.34-0.94 2			6.28			
Oyster, Portuguese <u>Ostrea angulata</u>	Whole Raw	55.13 47.70-62.50 2	835.52 781.70-863.00 3		17.80 2.03-33.56 2	0.13	19.50		245.85 132.60-425.30 3	8.77 7.89-9.66 2	0.12 0.07-0.16 2	
	Dried						158.50					
Oyster, Rock <u>Ostrea glamerata</u>	Whole Canned	478.00			2.20		8.30		377.00			
Oyster, Sidney, Rock <u>Ostrea commercialis</u>	Whole Raw	50.00	318.00						24.35 18.70-30.00 2		0.01	
Oyster <u>Ostreidae</u>	Whole Raw	81.85 30.00-410.00 17	232.46 2.97-745.70 9	1.12 1/ 0.65-1.58 2/ 2 3/	2.10 1.08-4.11 3	0.72 0.37-1.16 4	1.44 0.13-4.00 3	1.23 0.52-3.40 6	62.35 12.30-207.90 14	3.29 2.40-6.00 6	0.06 0.02-0.08 5	
	Canned	75.52 59.10-100.00 3			0.96	1.19 0.80-1.43 3	2.23 0.36-4.10 2	1.47 0.61-2.40 3	60.50	42.00	0.22 0.04-0.58 3	0.0
	Dried	299.33 235.00-332.00 3										
	Salted	42.00										
Periwinkle <u>Littorina littorea</u>	Whole Raw	15.10			0.75	1.04	0.20	13.32	27.66 12.19-42.36 3	0.30 0.04-0.56 2		
	Cooked				4.63							
Periwinkle <u>Littorina neritoides</u>	Whole Raw	203.00 141.00-265.00 2						55.05 8.10-102.00 2				

Table 18.--Microelement (Group 1) composition of mollusks and products.

Common and Scientific Name	Description	Iron	Zinc	Fluorine	Arsenic	Iodine	Lead	Cadmium	Copper	Manganese	Mercury	Methyl-mercury
Parts Per Million (PPM)												
Periwinkle	Whole											
Littorinidae	Raw				21.12		1.50					
	Cooked											
	Boiled	160.50										
		150.00-171.00										
		2										
	Dried						12.60					
Scallop	Muscle											
<u>Chlamys glabra</u>	Raw	446.00	0.45						0.02	0.21		
Scallop, Amande de Mar	Muscle											
<u>Pectonculus glycymeris</u>	Raw											0.03
Scallop, Bay	Muscle											
<u>Pecten aquisulacalius</u>	Raw								3.10			
Scallop, Calico	Muscle											
<u>Aequipecten gibbus</u>	Raw				4.10		0.39	2.37				0.04
Scallop, Common	Muscle											
<u>Pecten yessaensis</u>	Raw	12.00										
	Canned	18.50										
	Salted	7.00-30.00										
		2										
	Dried	37.00										
Scallop, Coquille	Muscle											
St. Jacques	Raw	22.05	23.28				0.35	5.66	1.00	0.50		
<u>Pecten maximus</u>		18.00-26.00							0.50-1.50			
		2							2			
Scallop, Great	Muscle											
<u>Pecten jacobaeus</u>	Raw				19.26					1.97		
Scallop, Green	Muscle											
<u>Chlamys opercularis</u>	Raw									1.00		
Scallop, Iceland	Muscle											
<u>Pecten islandicus</u>	Raw	6.50	17.00				0.20		1.30		0.05	
Scallop, Sea	Muscle											
<u>Pecten grandis</u>	Raw					0.48			10.00	1.00		
						0.15-0.80						
						2						
Scallop, Sea	Muscle											
<u>Pecten magellanicus</u>	Raw				1.64		0.47	0.14			0.07	
											0.05-0.09	
											2	
Scallop, Sea Vieira	Muscle											
<u>Pecten genero</u>	Raw				0.39							
Scallop	Muscle											
Pectinidae	Raw	11.00			11.98	0.18	0.20	0.03	1.75	20.00	0.03	
		4.00-18.00			0.69-33.6		0.15-0.24		1.20-2.30	0.11-39.00	0.01-0.04	
		2			3		2		2	2	4	
	Canned	18.50										
		7.00-30.00										
		2										
	Cooked											
	Steamed	30.00										

Table 18.--Microelement (Group 1) composition of mollusks and products.

Common and Scientific Name	Description	Iron	Zinc	Fluorine	Arsenic	Iodine	Lead	Cadmium	Copper	Man- ganese	Mercury	Methyl- mercury
	Dried	47.00										
		15.00-79.00										
		2										
Snail	Whole											
<u>Achatina marginata</u>	Raw	41.00										
Snail	Whole											
<u>Archidoris montergyensis</u>	Raw								1.30			
Snail	Whole											
<u>Helix hortensius</u>	Raw									17.61		
Snail	Whole											
<u>Murex brandarix</u>	Raw	611.00	1.63						0.43	1.20		
Snail	Whole											
<u>Thais chocolata</u>	Raw	140.00			1.40				22.00			
Snail, Common	Whole											
<u>Helix aspersa</u>	Raw								62.20			
Snail, Land	Whole											
<u>Archidoris brittanicus</u>	Raw	13.00		4100.00					24.00			
Snail, River	Whole											
<u>Vivipara quadrata</u>	Raw	200.00										
Snail	Whole											
<u>Vivapara javanica</u>	Raw	86.00										
Snail, Rock	Whole											
<u>Murex trunculos</u>	Cooked				21.00							
Snail	Whole											
Unspecified	Raw	25.00				0.06			8.97	16.00	0.29	
	Cooked											
	Unspecified	23.00										
Squid	Muscle											
<u>Loligo brasiliensis</u>	Raw				1.00							
Squid	Muscle											
<u>Loligo forbesi</u>	Raw										0.09	
Squid	Muscle											
<u>Loligo ommastrephes</u>	Raw	10.00								0.20	0.06	
	Cooked											
	Unspecified	14.00										
	Dried & Soaked	21.00										
	Salted & Dried	14.00										
Squid, Japanese	Muscle											
<u>Ommastrephes sloani</u>	Raw	42.80								0.20		
<u>pacificus</u>												
Squid	Muscle											
<u>Watasemia scintillans</u>	Raw	25.00										
Squid, Common	Muscle											
<u>Loligo vulgaris</u>	Raw	19.75	11.82		2.57	1.46	0.94	0.13	2.91		0.27	
		15.50-24.50	9.14-14.50				0.63-1.25		1.50-5.56		0.12-0.48	
		2	2				2		2		6	

Table 18.--Microelement (Group 1) composition of mollusks and products.

Common and Scientific Name	Description	Iron	Zinc	Fluorine	Arsenic	Iodine	Lead	Cadmium	Copper	Manganese	Mercury	Methylmercury
Parts Per Million (PPM)												
	Cooked Unspecified				1.62 1.40-1.83 2							
Squid, Flying <u>Ommastrephes sagittatus</u>	Muscle Raw				3.60 0.70-6.50 2	1.39					0.20	
Squid, Gouldi, Flying <u>Notodarius gouldi</u>	Muscle Raw		18.50					0.05	5.30	0.50		
Squid, Long-Finned <u>Loligo pealii</u>	Muscle Dried	32.00										
Squid, Pacific <u>Loligo opalescens</u>	Muscle Raw					0.21						
Squid, Short-Finned, Atlantic <u>Illex illecebrosus</u>	Muscle Raw										0.11	
Squid Unspecified	Muscle Raw	13.47 4.00-27.30 7	35.86 11.79-84.00 3					1.49 0.20-2.78 2	7.02 2.80-16.20 6	0.54		
	Cooked Boiled	7.87										
	Unspecified	13.69 7.87-19.50 2										
	Dried	23.93 19.62-32.20 3										
	Salted & Dried Smoked	20.00	23.50					3.19				
Top Shell <u>Tegula gallina</u>	Muscle Raw								6.10			
Top Shell <u>Tegula viridula</u>	Muscle Raw								8.70			
Turban <u>Turbo cornutus</u>	Muscle Raw	90.00										
	Canned Seasoned	30.50 29.00-32.00 2										
Turban, Wavy <u>Astraea undosa</u>	Muscle Raw								8.00			
Whelk <u>Buccinum humphreysanum</u>	Muscle Raw				63.20							
Whelk <u>Eburna japonica</u>	Muscle Raw	22.00										
Whelk, Common Northern <u>Buccinum undatum</u>	Muscle Raw	12.00							13.50	16.00		
Whelk, Dogwinkle, Atlantic <u>Nuccella lapillus</u>	Muscle Raw										0.48	
Whelk Unspecified	Muscle Raw				18.13		1.40					
	Cooked	62.00					11.05					
	Dried											

1/ Average of the means obtained from the literature cited.

2/ Range of the means found in literature cited.

3/ Number of mean values, which were reported in the literature cited.

4/ Method of processing was not clearly described or the fish was identified only by common name.

Table 19.--Microelement (Group 2) composition of finfishes, whales, and products.

Common and Scientific Name	Description	Silver	Chromium	Nickel	Selenium	Molybdenum	Vanadium	Tin	Bromine	Cobalt	Aluminum	Barium
Parts Per Million (PPM)												
Ainame	Muscle											
<u>Hexagrammos otakii</u>	Raw									0.03		
Alewife	Whole											
<u>Alosa pseudoharengus</u>	Raw		1.10							0.03		
	Fishmeal		12.00								96.00	10.00
Amberjack, Yellowtail	Muscle											
<u>Seriola quinqueradiata</u>	Raw									0.02		
Anchoveta	Whole											
<u>Engraulis mysticetus</u>	Fishmeal				1.10							
Anchoveta	Whole											
<u>Engraulis ringens</u>	Fishmeal		0.06								0.73	0.06
Anchovy	Muscle											
<u>Engraulidae</u>	Canned			0.72				129.31				
	Whole											
	Fishmeal		7.00 ^{1/} 6.00-8.00 ^{2/} 2 ^{2/}		1.40						75.00 ^{1/} 73.00-77.00 ^{2/} 23 ^{2/}	5.50 ^{1/} 5.00-6.00 ^{2/} 2 ^{2/}
Argentina, Atlantic	Whole											
<u>Argentina silus</u>	Fishmeal		2.70		1.80	4.20				0.18	110.00	1.60
Bass, Sea, Japanese	Muscle											
<u>Lateolabrax japonicus</u>	Raw									0.05		
	Dried									0.05		
Bass, Sea, Kelp	Muscle											
<u>Parlabrax clathratus</u>	Dried	0.09	1.45 1.30-1.70 4	3.01 ^{1/} 0.61-5.70 ^{2/} 4 ^{2/}		0.18 ^{1/} 0.10-0.20 ^{2/} 4 ^{2/}	2.53 ^{1/} 1.70-3.30 ^{2/} 4 ^{2/}			2.28 ^{1/} 1.70-4.30 ^{2/} 4 ^{2/}	14.70 0.80-25.00 4	1.60 1.30-2.00 4
Bass, Sea	Muscle											
<u>Serranidae</u>	Raw				0.66							
Bass, Temperate, Striped	Muscle											
<u>Morone saxatilis</u>	Raw				0.38							
Bass, Temperate, White	Muscle											
<u>Morone chrysops</u>	Raw				0.42							
Big-Eye	Muscle											
<u>Priacanthus japonicus</u>	Dried									0.01		
Bloater	Muscle											
<u>Coregonus hoyi</u>	Smoked							4.30				
Bonito, Striped	Muscle											
<u>Sarda orientalis</u>	Raw										17.80	
Bowfin, Mudfish	Muscle											
<u>Amia calva</u>	Raw				0.15							
Bream, Sea, Crimson	Muscle											
<u>Evynnis japonicus</u>	Cooked									0.03		

Table 19.--Microelement (Group 2) composition of finfishes, shales, and products.

Common and Scientific Name	Description	Silver	Chromium	Nickel	Selenium	Molybdenum	Vanadium	Tin	Bromine	Cobalt	Aluminum	Barium
						Parts Per Million (PPM)						
Burbot <u>Lota lota</u>	Muscle Raw				0.33							
	Offal Fishmeal		17.00								130.00	16.00
Capelin <u>Mallotus villosus</u>	Whole FPC				1.50	0.10				0.10		
	Fishmeal		1.50		1.13	1.38				0.10	97.00	2.00
					0.58-1.70	3.2						
Carp, Crucian <u>Cyprinus carassius</u>	Muscle Raw										1.30	
Carp, Indian <u>Labeo rohita</u>	Muscle Raw									0.42		
Carp, Katla <u>Catla catla</u>	Muscle Raw									0.42 0.38-0.46		
										2		
Carp, Orange Fin <u>Labeo calbasu</u>	Muscle Raw									0.21		
Catfish, Airbreathing, Hito <u>Clarias batrachus</u>	Muscle Dried									0.32		
Catfish, Fresh Water, Butter, Pabda <u>Callichrous bimaculatus</u>	Muscle Cooked									0.86		
Catfish, Fresh Water, Channel <u>Ictalurus punctatus</u>	Muscle Raw		0.12									
Catfish, Fresh Water, Dwarf <u>Macrone cavasius</u>	Muscle Dried									0.21		
Catfish, Fresh Water, Mulley <u>Wallagonia attu</u>	Muscle Dried									0.35		
Catfish, Fresh Water, Striped, Dwarf <u>Macrones vittatus</u>	Muscle Dried									0.80		
Catfish, Fresh Water Ictaluridae	Muscle Raw		0.23		0.19 0.10-0.37	11						
Catfish, Stinging <u>Saccobranchus fossilis</u>	Muscle Dried									0.38		
Cisco, Lake <u>Coregonus artedii</u>	Eviscerated & Beheaded Raw				0.33							
	Whole Fishmeal		13.00								120.00	10.00
Cod, Atlantic <u>Gadus morhua</u>	Muscle Raw		0.10 0.07-0.12		0.44							
			2									

Table 19.--Microelement (Group 2) composition of finfishes, whales, and products.

Common and Scientific Name	Description	Silver	Chromium	Nickel	Selenium	Molyb- denum	Vanadium	Tin	Bromine	Cobalt	Aluminum	Barium
						Parts Per Million (PPM)						
Cod, Pacific <u>Gadus macrocephalus</u>	Muscle Dried									0.06		
Cod Gadidae	Muscle Raw		0.14		0.43		0.96	2.08 ^{1/} 0.49-3.67 ^{2/} 3 ^{3/}		0.35 0.00-1.21 4		
	Dried Salted & Dried				0.43		0.96				38.27	
Croaker, Atlantic <u>Micropogon undulatus</u>	Muscle Raw				0.84							
Cusk-Eel, Bearded Ophidium <u>Ophiodon barbatum</u>	Muscle Raw										1.80	
Cutlassfish <u>Trichiurus lepturus</u>	Muscle Raw						0.00	0.00			0.80	
Dab Pleuronectidae	Dressed Raw			0.06						0.00		
Dory, Mirror <u>Zenopsis nebulosa</u>	Muscle Dried									0.10		
Drum, Fresh Water <u>Aplodinotus grunniens</u>	Muscle Raw				0.31 0.19-0.43 2							
	Whole Fishmeal		16.00								145.00	10.00
Eel, Conger Congridae	Muscle Raw						0.00	0.00			2.80	
Eel, Snake <u>Ophicephalus sonnerati</u>	Muscle Dried									0.25		
Eel, Snake, Murrel <u>Ophicephalus marulius</u>	Muscle Dried									0.21		
Eel, Snake Ophichthidae	Muscle Raw									0.00		
Eel, Spiny <u>Mastacembelus armatus</u>	Muscle Dried									0.49		
Featherback <u>Notopterus notopterus</u>	Muscle Dried									0.29		
Flounder <u>Cleisthenes pinetorum</u> <u>herzensteini</u>	Muscle Raw				0.34							
Flounder, Witch <u>Glyptocephalus cynoglossus</u>	Dressed Raw									0.01		
Flounder, Yellowtail <u>Limanda ferruginea</u>	Muscle Raw		0.09									

Table 19.--Microelement (Group 2) composition of finfishes, whales, and products.

Common and Scientific Name	Description	Silver	Chromium	Nickel	Selenium	Molybdenum	Vanadium	Tin	Bromine	Cobalt	Aluminum	Barium
						Parts Per Million		(PPM)				
Flounder <i>Bothidae/Pleuronectidae</i>	Muscle Raw				0.86 0.34-1.38 2			3.21		0.01	32.30	
	Cooked											
	Baked				1.51							
Gar <i>Lepisoteidae</i>	Muscle Raw										2.60	
Goby, Flathead <i>Glossosobius giuris</i>	Muscle Dried									0.53		
Goby <i>Gobiidae</i>	Muscle Raw										1.90	
Goldfish, Funa <i>Carassius auratus</i>	Eviscerated & Beheaded Raw	0.04			0.16		1.77	18.20			29.60	
Grenadier <i>Macrouridae</i>	Muscle Raw				0.00		0.00	0.00			1.90	
Grouper, Black <i>Epinephelus lanceolatus</i>	Muscle Dried									0.29		
Gurnard <i>Cheilodactylus macropterus</i>	Muscle Raw						1.43	31.05 17.80-44.30 2			0.40	
Haddock <i>Melanogrammus aeglefinus</i>	Muscle Raw		0.12 0.02-0.30 4	0.05		0.03					1.00	0.20
Hake <i>Urophycis brasiliensis</i>	Muscle Raw						1.33	0.93 0.00-1.90 3			0.91 0.14-1.70 4	
Hake, Pacific <i>Merluccius productus</i>	Muscle Raw		0.09									
	Whole Fishmeal		0.41							0.30	62.00	3.50
Hake, Silver, Whiting <i>Merluccius bilinearis</i>	Muscle Raw		0.09	0.01								
Hake <i>Gadidae</i>	Muscle Raw						0.63	3.60		0.00	21.80	
Halibut, Pacific <i>Hippoglossus stenolepis</i>	Muscle Raw		0.17									
Halibut <i>Pleuronectidae</i>	Muscle Raw	0.02	0.01			0.04	0.01 0.00-0.05 4	1.21		0.51	3.10	

Table 19.--Microelement (Group 2) composition of finfishes, whales, and products.

Common and Scientific Name	Description	Silver	Chromium	Nickel	Selenium	Molybdenum	Vanadium	Tin	Bromine	Cobalt	Aluminum	Barium
		Parts Per Million (PPM)										
Herring, Atlantic <u>Clupea harengus</u>	Whole											
	Fishmeal		3.15 3.00-3.31 2		2.09 1.37-2.90 4	0.12				0.24	34.95 34.90-35.00 2	1.80 1.60-2.00 2
Herring, Deep Bodied <u>Sardinella perforata</u>	Muscle				0.01					0.02		
Herring <u>Clupeidae</u>	Raw			0.03		0.41 0.24-0.50 3	0.00	0.00		0.00	5.30 1.80-8.80 2	
		5.67 ^{1/} 0.00-11.00 ^{2/} 3 ^{3/}								0.00-0.01 2		
	Canned							44.33 26.79-61.88 2				
	Dried, Smoked & Salted Smoked			1.70	1.41			150.00				
	Whole			0.03						0.01		
	Raw Fishmeal		4.22		2.22 1.65-2.80 2				0.10		36.00 33.00-40.00 3	4.66 1.00-10.00 3
Katsuo <u>Euthynnus (katsuwonum) vagans</u>	Muscle									0.18		
	Dried									0.13-0.22 2		
Ladyfish <u>Elops saurus</u>	Muscle										12.47	
Lance, Sand <u>Ammodytes americanus</u>	Whole											
	Fishmeal		1.50			0.05				0.05	42.00	2.00
Leatherjacket, Yellow <u>Scomber lyson</u>	Muscle										1.20	
Mackerel, Atlantic <u>Scomber scombrus</u>	Raw				1.30							
	Whole											
	Fishmeal				3.04 1.92-3.80 3	0.10				0.20		
	Presscake				2.05 1.40-2.70 2	0.10			8.30	0.10		
Mackerel, Frigate <u>Auxis tapernosoma</u>	Muscle											
	Raw			0.19		0.06						
Mackerel, Jack <u>Trachurus japonicus</u>	Muscle									0.04		
Mackerel, Pacific Chub <u>Scomber japonicus/colias</u>	Raw									0.45		
	Dried									0.42		

Table 19.--Microelement (Group 2) composition of finfishes, whales, and products.

Common and Scientific Name	Description	Silver	Chromium	Nickel	Selenium	Molybdenum	Vanadium	Tin	Bromine	Cobalt	Aluminum	Barium
Parts Per Million (PPM)												
Mackerel Scombridae	Muscle Raw Dried			0.08			0.26			0.05		
Marlin, Black <u>Makaira indica</u>	Muscle Raw				1.85 0.80-2.33 2							
Menhaden, Atlantic <u>Brevoortia tyrannus</u>	Whole Fishmeal		9.60								270.00	27.00
Menhaden Clupeidae	Whole Fishmeal		8.94 6.87-11.00 2		2.15 2.09-2.20 2						339.10 326.20-352.00 2	15.34 5.61-20.00 3
Perch, Climbing <u>Anabas testudenicus</u>	Muscle Cooked Unspecified ^{4/}									0.42		
Perch, Yellow <u>Perca flavescens</u>	Muscle Raw Eviscerated & Beheaded Raw		0.07	0.20	0.32 0.57 0.19-0.89 5			0.55				
Pigfish, Grunt <u>Orthopristis chrysoptera</u>	Muscle Raw						0.00	0.26			2.60	
Pike, Chain Pickerel <u>Esox niger</u>	Eviscerated & Beheaded Raw				0.31 0.24-0.46 6							
Pike, Muskellunge <u>Esox masquinongy</u>	Eviscerated & Beheaded Raw				0.21 0.15-0.27 2							
Pike, Northern <u>Esox lucius</u>	Muscle Raw Eviscerated & Beheaded Raw		0.03 0.03-0.04 3	0.20 0.20-0.20 3	0.24 0.17-0.37 3			2.21 0.54-5.43 3				
					0.37 0.17-0.50 5							
Pilchard, Japanese <u>Sardinops melanosticta</u>	Muscle Raw Salted						2.86	0.45	0.05 ^{1/} 0.00-0.10 ^{2/} 2		1.05 0.10-2.00 2	
					0.01					0.02		
Pollack, Saithe, Coalfish <u>Pollachius virens</u>	Muscle Raw		0.08									

Table 19.--Microelement (Group 2) composition of finfishes, whales, and products.

Common and Scientific Name	Description	Silver	Chromium	Nickel	Selenium	Molybdenum	Vanadium	Tin	Bromine	Cobalt	Aluminum	Barium
							Parts Per Million	(PPM)				
Pollack, Walleye <u>Theragra chalcogramma</u>	Muscle Raw						0.00	0.00			5.60	
Pout, Norway <u>Gadus esmarki</u>	Whole Fishmeal				1.68 1.50-1.87 2	0.05				0.82		
Redfish, Ocean Perch <u>Sebastes marinus</u>	Whole Presscake				1.50							
Rockfish, Kichijj <u>Sebastes macrochir</u>	Muscle Dried									0.10		
Sablefish <u>Anoplopoma fimbria</u>	Muscle Raw									1.16	3.10	
Salmon, Chum <u>Oncorhynchus keta</u>	Muscle Raw							0.41			1.20	
Salmon, Coho <u>Oncorhynchus kitsutch</u>	Eviscerated & Beheaded Raw				0.35 0.30-0.40 6							
Salmon, Sockeye <u>Oncorhynchus nerka</u>	Muscle Raw Canned		0.16 0.30								8.20	0.20
Sardine Clupeidae	Muscle Raw Canned			0.21		0.03	0.17 0.01	0.00 11.80 10.11-13.50 2				
Saury, Pacific <u>Cololabis saira</u>	Muscle Raw									0.34 0.13-0.56 2	1.10	
Sea Cucumber <u>Cucumaria lefevrei</u>	Muscle Raw					0.42						
Sea Cucumber <u>Stichopus japonicus</u>	Muscle Raw										44.00	
Sea Robin, Gurnard <u>Lepidotrigla trauchi</u>	Muscle Dried									0.04		
Sea Robin, Gurnard, Red <u>Trigla cuculus</u>	Muscle Cooked					0.24						
Shad, Gizzard <u>Dorosoma cepedianum</u>	Muscle Raw					0.42						
Shark, Cat, Brown <u>Apristurus brunneus</u>	Muscle Raw					0.26						

Table 19.--Microelement (Group 2) composition of finfishes, whales, and products.

Common and Scientific Name	Description	Silver	Chromium	Nickel	Selenium	Molyb- denum	Vanadium	Tin	Bromine	Cobalt	Aluminum	Barium
Shark, Oceanic, Whitetip <u>Carcharhinus longimanus</u>	Muscle Raw	13.00		23.00 16.00-30.00 2				13.00 11.00-14.00 2		49.00	40.00 30.00-80.00 2	
Shark, Thresher <u>Alopias vulpinus</u>	Muscle Raw										10.00	
Shiner, Emerald <u>Notropis hudsonius</u>	Whole Raw		5.50 0.90-10.00 2							0.03 0.03-0.04 2		
Smelt, Lake <u>Osmerus mordax</u>	Muscle Raw		0.03	0.20	0.22			1.22		0.01		
Smelt Osmeridae	Muscle Raw			0.02	1.23					3.63 0.05-7.21 2		
	FPC				0.95							
Snapper, Red <u>Lutianus campechanus</u> <u>(blackfordii)</u>	Muscle Raw		0.12									
Sole <u>Microstomus stelleri</u>	Muscle Raw									0.03		
Sole Soleidae/Pleuronectidae	Muscle Raw		0.30					3.21			1.00	0.20
Sprat <u>Sprattus sprattus</u>	Muscle Raw									0.00		
Sturgeon, Atlantic <u>Acipenser oxyrinchus</u>	Eviscerated & Beheaded Raw				0.69							
Sturgeon, Shortnose <u>Acipenser brevirostrum</u>	Eviscerated & Beheaded Raw				0.37							
Sturgeon Acipenseridae	Eviscerated & Beheaded Raw				0.34							
Sucker, Common <u>Catostomus commersoni</u>	Eviscerated & Beheaded Raw				0.45							
Sucker Catostomidae	Muscle Raw				0.87							
Sunfish, Crappie, Black <u>Pomoxis nigromaculatus</u>	Eviscerated & Beheaded Raw				0.29							
Sunfish, Largemouth Bass <u>Micropterus salmoides</u>	Eviscerated & Beheaded Raw				0.33 0.15-0.53 8							

Table 19.--Microelement (Group 2) composition of finfishes, whales, and products.

Common and Scientific Name	Description	Silver	Chromium	Nickel	Selenium	Molybdenum	Vanadium	Tin	Bromine	Cobalt	Aluminum	Barium
Parts Per Million (PPM)												
Sunfish, Rock Bass <u>Ambloplites rupestris</u>	Eviscerated & Beheaded Raw				0.39 0.19-0.88 6							
Sunfish, Smallmouth Bass <u>Micropterus dolomieu</u>	Eviscerated & Beheaded Raw				0.39 0.15-0.61 23							
Sunfish Centrarchidae	Muscle Raw				0.36					3.72		
Swordfish <u>Xiphias gladius</u>	Muscle Raw	4.00	0.91	8.51 0.02-17.00 2				14.00		0.01	40.00	
Trout, Brook <u>Salvelinus fontinalis</u>	Eviscerated & Beheaded Raw				0.57							
Trout, Brown <u>Salmo trutta</u>	Eviscerated & Beheaded Raw				0.47 0.26-1.10 7							
Trout, Lake <u>Salvelinus namaycush</u>	Muscle Raw		0.02	0.01		0.01		0.12		0.19 0.06-0.31 2	0.22	0.01
	Eviscerated & Beheaded Raw				0.52 0.23-1.03 14							
Trout, Rainbow <u>Salmo gairdneri</u>	Muscle Raw					0.01						
	Eviscerated & Beheaded Raw				0.50 0.33-1.02 10							
Trout Salmonidae	Muscle Raw				0.53							
	Eviscerated & Beheaded Raw				0.48							
Tuna, Albacore <u>Thunnus alalunga</u>	Muscle Raw			0.04								
Tuna, Big-eye <u>Thunnus obesus</u>	Muscle Raw				0.07 0.07-0.08 2							
Tuna, Yellowfin <u>Thunnus albacares</u>	Muscle Raw		0.08	0.03		0.09				0.04		

Table 19.--Microelement (Group 2) composition of finfishes, whales, and products

Common and Scientific Name	Description	Silver	Chromium	Nickel	Selenium	Molybdenum	Vanadium	Tin	Bromine	Cobalt	Aluminum	Barium
						Parts Per Million		(PPM)				
Tuna <i>Scombridae</i>	Muscle Canned										0.68 0.35-1.00 3	0.20
	Offal Fishmeal		18.00		4.61 4.60-4.63 2						150.00	5.00
Tunny, Little <i>Euthynnus alletteratus</i>	Muscle Raw		0.42									
Turbot <i>Reinhardtius hippoglossoides</i>	Muscle Raw						0.00	0.00		0.91	0.28	
Turbot, Arrowtooth <i>Atheresthes stomias</i>	Muscle Raw	0.04					0.00	0.00		1.18	7.60	
Turbot, Greenland <i>Atheresthes evermanni</i>	Muscle Raw									0.04		
Walleye <i>Stizostedion vitreum vitreum</i>	Eviscerated & Beheaded Raw				0.24 0.19-0.31 9							
Whale Unspecified	Muscle Raw									0.21		
Whitefish, Lake <i>Coregonus clupeaformis</i>	Muscle Raw		0.03 0.02-0.03 2	0.20	0.31 0.24-0.38 2			2.18 0.80-3.57 2				
	Eviscerated & Beheaded Raw				0.50 0.23-0.73 7							
Whitefish <i>Salmonidae</i>	Whole Fishmeal									1.30		
Whiting <i>Merlangus merlangus</i>	Muscle Raw					0.29				0.03		
Whiting, Lady Vendi <i>Sillago schansia</i>	Muscle Raw			0.01			0.02			0.03		

1/ Average of the means obtained from the literature cited.

2/ Range of the means found in literature cited.

3/ Number of mean values, which were reported in the literature cited.

4/ Method of processing was not clearly described or the fish was identified only by common name.

Table 20.--Microelement (Group 2) composition of crustaceans and products.

Common and Scientific Name	Description	Silver	Chromium	Nickel	Selenium	Molybdenum	Vanadium	Tin	Bromine	Cobalt	Aluminum	Barium
		Parts Per Million (PPM)										
Crab <u>Portunus trituberculatus</u>	Muscle Raw										35.90	
Crab, Blue <u>Callinectes sapidus</u>	Muscle Raw		0.17			1.00				0.40		
	Offal Meal		22.85 ^{1/} 4.20-4.50 ^{2/}		3.77 ^{1/} 3.73-3.80 ^{2/}						430.00	18.58 ^{1/} 3.40-3.75 ^{2/}
Crab, Dungeness <u>Cancer magister</u>	Muscle Canned							3.58				
Crab, King <u>Paralithodes camtschatica</u>	Muscle Raw		0.10		0.51							
	Canned											
	Cooked											
	Unspecified ^{4/}		0.13									
	Offal Meal		15.10		0.24 0.24-0.25 2					176.00 ^{1/} 175.00-176.00 ^{2/}		8.97 8.95-9.00 2
Crab, Shore, Common Green <u>Carcinus maenas</u>	Muscle Raw					2.00						
Crab Unspecified	Muscle Raw					0.80 ^{1/} 0.60-1.00 ^{2/}				0.40		
	Canned		0.43 0.30-0.57 2	2.20				3.58		1.10	1.00	0.20
	Cooked											
	Steamed			0.03			0.13					
	Salted					0.60				0.01		
Crayfish Unspecified	Muscle Raw	6.59 ^{1/} 0.26-10.00 ^{2/}	0.05	0.10	0.66	0.23	6.74 ^{1/} 0.04-8.49 ^{2/}	1.03 ^{1/} 0.60-1.46 ^{2/}		1.46 0.12-2.80 2	38.54 ^{1/} 1.40-90.30 ^{2/}	
Lobster, Northern <u>Homarus americanus</u>	Muscle Canned							4.11				
Lobster Unspecified	Muscle Canned		0.01	0.38			5.10	2.36				
	Cooked											
	Unspecified				1.04							
	Offal Meal									0.95		
Shrimp, Bagda <u>Palaemon carcinus</u>	Muscle Dried									0.50 0.50-0.51 2		
Shrimp, Brown <u>Penaeus aztecus</u>	Muscle Raw		1.00			1.00				0.40		
Shrimp, Pink, Maine <u>Pandalus borealis</u>	Muscle Raw		0.11									
Shrimp, White <u>Penaeus setiferus</u>	Muscle Raw		0.05					1.83				
Shrimp Unspecified	Muscle Raw	0.67 0.01-0.12 3	0.03		1.02 0.59-1.88 3			1.83		0.65 0.03-1.81 3		
	Canned		0.30		0.29						1.00	0.20

^{1/} Average of the means obtained from the literature cited.^{2/} Range of the means found in literature cited.^{3/} Number of mean values, which were reported in the literature cited.^{4/} Method of processing was not clearly described or the fish was identified only by common name.

Table 21.--Microelement (Group 2) composition of mollusks and products.

Common and Scientific Name	Description	Silver	Chromium	Nickel	Selenium	Molybdenum	Vanadium	Tin	Bromine	Cobalt	Aluminum	Barium
Parts Per Million (PPM)												
Abalone, Japan <u>Haliotis japonica</u>	Muscle Raw									0.09		
Abalone Haliotidae	Muscle Raw				5.79							
Clam, Arkshell Arcidae	Muscle Raw				0.02							
Clam, Mactra, Surf <u>Mactra sachalinensis</u>	Muscle Dried									0.27		
Clam, Mactra, Surf <u>Spisula solidissima</u>	Muscle Raw		0.38									
Clam, Razor Solenidae	Whole Canned		0.78							1.30		
Clam, Softshell <u>Mesodesma globrata</u>	Whole Raw		0.52	0.27						0.10		
Clam, Softshell <u>Mya arenaria</u>	Whole Raw		0.37 ^{1/} 0.23-0.52 ^{2/} 3 ^{2/}	0.16 ^{1/} 0.04-0.27 ^{2/} 2 ^{3/}						0.10		
	Canned Dried			0.20				3.20				
Clam, Venus, Hard <u>Venus luzoria</u>	Whole Raw									0.41	254.70	
Clam, Venus Veneridae	Whole Raw		0.42 0.40-0.44 2	0.58	0.55					0.33		
Cockle Cardiidae	Whole Raw									0.41		
Cuttlefish Sepiidae	Muscle Raw									0.01		
Mussel, Blue <u>Mytilus edulis</u>	Whole Raw Canned Cooked Steamed		13.50 13.50 14.25	3.80 3.70 4.20	0.50 0.29 0.44	2.20 1.70 2.00	0.87 0.64 0.72	3.90 5.60 6.40		2.50 2.20 2.30	93.00 91.00 114.00	
Mussel Mytilidae	Whole Raw Dried			0.46			0.30			0.97 ^{1/} 0.90-1.03 ^{2/} 2 ^{2/}	2.90	
Octopus Octopodidae	Muscle Raw					0.56				0.11		
Oyster, Common <u>Ostrea edulis</u>	Whole Raw							37.00				
Oyster, Dredged <u>Ostrea senuata</u>	Whole Raw						1.10					

Table 21.--Microelement (Group 2) composition of mollusks and products.

Common and Scientific Name	Description	Silver	Chromium	Nickel	Selenium	Molybdenum	Vanadium	Parts Per Million (PPM)					Barium
								Tin	Bromine	Cobalt	Aluminum		
Oyster, Eastern <u>Ostrea virginica</u>	Whole												
	Raw	1.55	0.26	0.85			0.11	1.38			134.00		
			0.12-0.40- 2	0.19-1.50 2									
	Dried	46.50											
Oyster, Giant Pacific <u>Ostrea gigas</u>	Whole												
	Raw									0.33			
	Smoked							28.33					
Oyster, Portuguese <u>Ostrea angulata</u>	Whole												
	Raw							0.30					
Oyster, Rock <u>Ostrea glamerata</u>	Whole												
	Canned							0.01					
Oyster Ostreidae	Whole												
	Raw		0.17 0.09-0.26 2	1.50 0.49-0.65 2	0.57 1/ 0.37 2/		0.11	1.38		0.10 0.05-0.16 2			
	Canned		0.09	0.99	0.36					0.46			
Scallop, Calico <u>Aequipecten gibbus</u>	Muscle												
	Raw		0.10										
Scallop, Common <u>Pecten yessoensis</u>	Muscle												
	Raw									0.37			
Scallop, Coquille St. Jacques <u>Pecten maximus</u>	Muscle												
	Raw			0.05									
	Dried			0.32									
Scallop, Sea Giant <u>Pecten magellanicus</u>	Muscle												
	Raw		0.06										
Scallop Pectinidae	Muscle												
	Raw		0.08 0.05-0.11 2	0.04						2.25			
Squid <u>Loligo ommastrephes</u>	Muscle												
	Raw					0.30				0.12			
Squid, Japanese <u>Ommastrephes sloani</u> <u>pacificus</u>	Muscle												
	Raw									0.12	4.20		
Squid, Flying <u>Ommastrephes sagittatus</u>	Muscle												
	Raw				3.00								
Squid Unspecified 4/	Muscle												
	Raw	0.03				0.70	0.00	0.17		0.48	2.60		
	Whole												
	Raw									2.90 2.60-3.40 3			

^{1/} Average of the means obtained from the literature cited.^{2/} Range of the means found in literature cited.^{3/} Number of mean values, which were reported in the literature cited.^{4/} Method of processing was not clearly described or the fish was identified only by common name.

Table 22.--Vitamin composition of finfishes, whales, and products.

Common and Scientific Name	Description	Vitamin A I. U.	Thiamine mg	Riboflavin mg	Niacin mg Per 100 grams	Ascorbic Acid mg	Folic Acid mg	Vitamin B ₁₂ mg
Alewife <i>Alosa pseudoharengus</i>	Whole Fishmeal		10.00	370.00	3.40			28.40
Alfoncino <i>Beryx splendens</i>	Muscle Raw	50.00	150.00	200.00	3.00			0.11
Amberjack, Greater <i>Seriola dumerili</i>	Muscle Salted & Dried		180.00	78.00	10.00			14.30
Amberjack, Philippine <i>Hynnys momsa</i>	Muscle Raw Dried		54.00 50.00	25.00 20.00	7.06 5.50			
Amberjack, Rudderfish <i>Seriola purpurascens</i>	Muscle Raw					1.80		
Amberjack, Yellowtail <i>Seriola lalandi</i>	Muscle Raw		27.00	98.00	7.23			
Amberjack, Yellowtail <i>Seriola quinqueradiata</i>	Muscle Raw Dark meat Canned In Oil, Smoked	22.40 53.00	127.00 ^{1/} 110.00-144.00 ^{2/} 2 ^{3/} 476.00	80.00 ^{1/} 40.00-12.00 ^{2/} 2 ^{3/} 732.00	8.00 ^{1/} 6.80-9.20 ^{2/} 2 ^{3/} 7.70	1.90 ^{1/} 1.00-2.80 ^{2/} 2 ^{3/}	3.45 ^{1/} 3.20-3.70 ^{2/} 2 ^{3/}	3.45 ^{1/} 1.30-5.60 ^{2/} 2 ^{3/} 6.80
Amberjack Carangidae	Muscle Raw		100.00	80.00 40.00-120.00 2	6.60 6.40-6.80 2			5.56
Anchovy <i>Coilia nasus</i>	Muscle Raw	59.50						
Anchovy, Ca'Moi <i>Coilia lindmani</i>	Muscle Raw		37.00					
Anchovy, European <i>Engraulis encrasicolus</i>	Muscle Raw		70.00	270.00	19.60			
Anchovy, Longjaw, Delis <i>Stolephorus commersonii</i>	Muscle Raw Dried Salted & Dried Salted & Fermented Whole FPC	635.00	6.30 10.00 56.00 0.00	79.00 230.00 9.45 130.00	3.36 7.50 9.45 3.80			6.25
					5.30 3.5-7.1 2			16.85 15.8-17.9 2
Anchovy, Mandali <i>Coilia dussumieri</i>	Muscle Raw			250.00	1.80 1.49-2.12 2			
Anchovy, Pacific <i>Engraulis japonicus</i>	Muscle Raw							0.30
Anchovy Engraulidae	Muscle Raw	490.67 ^{1/} 30.00-1300.00 ^{2/} 3 ^{2/}	68.33 10.00-200.00 6	200.16 99.00-510.00 6	3.14 0.00-7.00 7		12.30	6.30

Table 22.--Vitamin composition of finfishes, whales, and products.

Common and Scientific Name	Description	Vitamin A I. U.	Thiamine mg	Riboflavin mg	Niacin mg Per 100 grams	Ascorbic Acid mg	Folic Acid mg	Vitamin B ₁₂ mg
	Cooked							
	Boiled							
	Dried		20.00	200.00	8.50			
	Dried		100.00	207.00	11.93			
			40.00-159.00	110.00-311.00	4.60-17.00			
			3	3	3			
	Salted & Dried		10.00	110.00	2.30			11.00
	Whole							
	Raw	225.00						14.00
	Fishmeal			470.00	4.10			
Angelfish, Blue <u>Holacanthus angelichthys</u>	Muscle							
	Raw		318.00	443.00	4.58			
Argentine, Atlantic <u>Argentina silus</u>	Whole							
	Raw		30.00	830.00	6.81		18.70	5.97
Barracuda <u>Sphyræna japonica</u>	Muscle							
	Raw	50.76						0.20
Barracuda <u>Sphyræna obusata</u>	Muscle							
	Raw		8.00	27.00	2.40		11.90	
Barracuda, Great <u>Sphyræna barracuda</u>	Muscle							
	Raw		13.40	78.00	5.10			1.60
Barracuda, Pacific <u>Sphyræna argentea</u>	Muscle							
	Raw		70.00	70.00	3.00		11.90	1.80
Barracuda, Striped Torcillo <u>Sphyræna jello</u>	Muscle							
	Raw		44.00	87.00	5.90			
Barracuda Sphyrænidae	Muscle							
	Raw	70.00	170.00	105.00	3.60			
			120.00-220.00	90.00-120.00	3.10-4.10			
			2	2	2			
Bass, Sea <u>Diplætrum radiale</u>	Muscle							
	Raw		23.50	47.00	1.50			1.60
			4.00-43.00					
			2					
Bass, Sea <u>Paralabrax humeralis</u>	Muscle							
	Raw	9.98						
Bass, Sea, Japanese <u>Lateolabrax japonicus</u>	Muscle							
	Raw	153.50	110.00	120.00	1.60			
		123.00-184.00						
		2						
Bass, Sea, Kelp <u>Paralabrax clathratus</u>	Muscle							
	Raw		54.00	50.00	1.05			
Bass, Sea Serranidae	Muscle							
	Raw	142.00	86.00	58.14	4.81			0.30
		104.00-180.00	30.00-128.00	0.70-110.00	2.40-11.60			
		2	6	5	5			
Big-Eye <u>Scombroproops</u>	Muscle							
	Raw	60.00	100.00	210.00	6.00			
				50.00-370.00				
				2				
Billfish Istiophoridae	Muscle							
	Raw	10.00	65.00	40.00	6.25	2.00		
			30.00-100.00	20.00-60.00	4.50-8.00			
			2	2	2			
Bluefish <u>Pomatomus saltatrix</u>	Muscle							
	Raw		135.00	120.00	1.55			
			120.00-150.00	90.00-150.00	0.80-1.94			
			2	2	3			

Table 22.--Vitamin composition of finfishes, whales, and products.

Common and Scientific Name	Description	Vitamin A I. U.	Thiamine mg	Riboflavin mg	Niacin mg Per 100 grams	Ascorbic Acid mg	Folic Acid mg	Vitamin B ₁₂ mg
	Dried		190.00	400.00	13.20			
Bombay Duck <u>Harpodon nehereus</u>	Muscle							
	Raw		3480.00 200.00-6760.00 2	1810.00 500.00-3120.00 2	6.10			
	Dried		20.33	1013.33	2.83			
	Eviscerated							
	Raw		88.00	171.00	3.92			
Bonito, Pacific <u>Sarda chiliensis</u>	Muscle							
	Raw		10.00	50.00	12.80	0.00		
	Cooked							
	Roasted		10.00	40.00		0.00		
	Salted & Dried		70.00	130.00	6.25	0.00		
Bonito Scombridae	Muscle							
	Raw	424.00	29.33 10.00-58.00 3	50.00	12.80	0.00		
	Cooked							
	Roasted		10.00	40.00		0.00		
	Dried		28.60					
	Dried & Salted		70.00	130.00	6.20	0.00		
Bream, Bronze <u>Abramis brama</u>	Muscle							
	Raw	30.00						
Bream, Gilthead <u>Chrysophrys aurata</u>	Muscle							
	Raw		42.00	137.00	4.30			1.14
	Cooked							
	Baked		32.00	135.00	3.80			1.51
	Boiled		37.00	117.00	3.50			0.95
Bream, Mud <u>Acanthopagrus berda</u>	Muscle							
	Raw	144.00	17.50 15.00-20.00 2	32.00 30.00-34.00 2	7.11 7.10-7.12 2			2.18
	Canned		60.00	33.00	9.43			
	Dried		10.00	30.00	9.40			
Bream, Sea <u>Sparus swinhonis</u>	Muscle							
	Raw	100.00	100.00	150.00		0.00		
Bream, Sea, Black <u>Acanthopagrus schlegeli</u>	Muscle							
	Raw	21.50				2.25 1.70-2.80 2		
Bream, Sea, Kurd Dai <u>Sparus macrocephalus</u>	Muscle							
	Raw		100.60					
Bream, Sea, Pagre <u>Pagrus pagrus</u>	Muscle							
	Raw							8.75
Bream, Sea, Red <u>Chrysophrys major</u>	Muscle							
	Raw	83.75 67.50-100.00 2	200.00	200.00	2.00	2.00		0.20
Bream, Sea, Silver <u>Sparus sarba</u>	Muscle							
	Raw					3.45 2.90-4.00 2		

Table 22.--Vitamin composition of finfishes, whales, and products.

Common and Scientific Name	Description	Vitamin A I. U.	Thiamine μ g	Riboflavin μ g	Niacin mg Per 100 grams	Ascorbic Acid mg	Folic Acid μ g	Vitamin B ₁₂ μ g
Bream, Sea, Yellow <u>Taius tumifrons</u>	Muscle Raw	90.00	180.00	210.00		0.00		
Bream, Silver, Japanese <u>Chrysophrys datnia</u>	Muscle Raw		30.00	250.00	1.89			
Bream, Tooched <u>Dentex vulgaris</u>	Muscle Cooked Baked Boiled		64.00 63.00	144.00 146.00	3.55 2.80			0.83 0.95
Bream, White, Sargo <u>Diplodus sargus</u>	Muscle Raw Salted & Dried		45.00	82.00	7.80			2.15 2.60
Bream Sparidae	Muscle Raw Cooked Baked Boiled	7.00	144.00 42.00-200.00 3	171.00 137.00-205.00 2	4.28 4.25-4.30 2			1.10
Brill, Rough Scaled <u>Pseudorhombus oligodon</u>	Muscle Raw		44.00	40.00	6.48			
Burbot <u>Lota lota</u>	Muscle Raw Canned Cooked Baked Fried Whole FPC		372.41 306.30-455.00 4 86.60	140.90 140.00-141.80 2 199.70	1.62 1.59-1.64 2 0.88 3.74			37.40
Butterfish, Black <u>Stromateus niger</u>	Muscle Raw Canned		77.60 20.00-162.80 3 20.88	172.93 90.00-300.00 3 300.48	2.63 0.84-5.07 4 1.24			2.33
Butterfish, Silver <u>Stromateus cinereus</u>	Muscle Raw Canned Cooked Steamed	97.00 12.00-182.00 2	164.00	124.00	8.10			
Butterfish Stromateidae	Muscle Raw				2.85 2.60-3.10 2			
Butterflyfish, Ca Chix <u>Coradion altivelis</u>	Muscle Raw		25.00					
Butterflyfish Chaetodontidae	Muscle Raw		37.50 35.00-40.00 2	44.50 19.00-70.00 2	4.40 4.39-4.40 2			
Caesio, Golden <u>Caesio chrysozonus</u>	Muscle Raw		24.00 20.00-28.00 2	23.50 20.00-27.00 2	3.76 3.20-4.32 2		7.78	2.32 1.50-3.14 2

Table 22.--Vitamin composition of finfishes, whales, and products.

Common and Scientific Name	Description	Vitamin A I. U.	Thiamine μ g	Riboflavin μ g	Niacin mg Per 100 grams	Ascorbic Acid mg	Folic Acid μ g	Vitamin B12 μ g
	Dried		130.00	30.00	5.40			
Caesio, Golden <u>Caesio cuning</u>	Muscle Raw		10.00	18.00	2.17			
	Cooked Fried In Coconut Oil			130.00				
Caesio, Sulid <u>Caesio caeruleus</u>	Muscle Raw						1.15	
Carp <u>Cyprinus carpio</u>	Muscle Raw	941.25 35.00-2130.00 4	115.29 5.00-400.00 7	55.00 40.00-70.00 2	1.64 1.33-2.60 6	1.38 0.90-1.60 4		0.86 0.20-1.53 2
	Cooked Baked Fried		40.00		1.56			
Carp <u>Puntius javanicus</u>	Muscle Salted and Dried		10.00	157.00	3.86			9.60
Carp, Bata <u>Labeo bata</u>	Muscle Raw				0.60 0.59-0.62 2			
Carp, Black <u>Mylopharyngodon aethiops</u>	Muscle Raw	13.50						
Carp, Crucian <u>Cyprinus carassius</u>	Muscle Raw	36.40 29.00-50.00 3	307.94 149.70-400.00 5	116.67 100.00-150.00 3	2.45 2.40-2.50 2			
	Canned In Oil		40.00	120.00	3.00			
Carp, Grass <u>Ctenopharyngodon idellus</u>	Muscle Raw	18.00						
Carp, Indian <u>Barbus putitora</u>	Muscle Raw					15.47 13.60-16.40 3		
Carp, Indian <u>Labeo rohita</u>	Muscle Raw		72.00 54.00-90.00 2		2.70	31.69 13.40-61.68 3	81.02 21.65-138.00 3	4.55 2.40-6.70 2
	Cooked Boiled Unspecified ^{4/}						81.00 11.95 11.40-12.50 2	1.30
Carp, Indian, Puti <u>Barbus punitus sophore</u>	Muscle Raw				0.38 0.32-0.44 2	15.30		
	Whole Raw	5.70						
Carp, Katla <u>Catla buehanani</u>	Muscle Raw							2.60
	Cooked Fried In Mustard Oil							1.40
Carp, Katla <u>Catla catla</u>	Muscle Raw	5.70	86.70		1.06 0.82-1.30 2	14.99 9.30-20.67 2	2.80	1.39

Table 22.--Vitamin composition of finfishes, whales, and products.

Common and Scientific Name	Description	Vitamin A I. U.	Thiamine mg	Riboflavin mg	Niacin mg Per 100 grams	Ascorbic Acid mg	Folic Acid mg	Vitamin B12 mg
	Cooked Boiled Fried In Mustard Oil							3.05
Carp, Mrigala <u>Cirrhhina mrigala</u>	Muscle Raw		30.00		0.73	12.27 11.00-14.80 3	1.60	
Carp, Orange Fin <u>Labeo calbasu</u>	Muscle Raw					11.20	10.60	
Carp, Silver <u>Hypophthalmichthys molitrix</u>	Muscle Raw	40.70	60.00	180.00	2.60			
Carp, Tribolodon <u>Tribolodon baronensis</u>	Muscle Raw	82.00 60.00-104.00 2	300.00	100.00	2.00	0.00		
Carp Cyprinidae	Muscle Raw	63.33 0.00-170.00 3	246.29 10.00-448.00 7	52.50 40.00-80.00 4	1.80 1.50-2.00 3	0.00		4.52 0.05-9.00 2
Catfish, Airbreathing, Hito <u>Clarias batrachus</u>	Muscle Raw	633.00	44.25 8.00-110.00 4	35.50 31.00-40.00 2	1.72 0.45-3.20 4	1.15	40.73 11.30-153.00 5	3.42 2.90-3.70 4
	Cooked Boiled Fried In Mustard Oil						4.00	2.90 2.15 0.3-4.0 2
Catfish, Fresh Water <u>Chpiso magarua</u>	Muscle Raw					13.00		
Catfish, Fresh Water, Butter, Pabda <u>Callichrous bimaculatus</u>	Muscle Raw Smoked		10.00	192.00	6.55			11.50 15.00
Catfish, Fresh Water, Dwarf <u>Macrones cavasius</u>	Muscle Raw							3.90
Catfish, Fresh Water, Mulley <u>Wallagonia attu</u>	Muscle Raw				0.98	6.80 6.00-7.60 2	4.30	4.60
	Cooked Boiled Fried In Mustard Oil						2.00	1.36 1.32
Catfish, Fresh Water, Pangash <u>Pangasius pangasius</u>	Muscle Raw					19.40 12.50-26.30 2		
Catfish, Fresh Water, Striped Dwarf <u>Macrones vittalus</u>	Muscle Raw Cooked Boiled Fried In Mustard Oil					17.60	64.00	4.35 3.90 2.30
Catfish, Fresh Water Ictaluridae	Muscle Raw	60.00	40.00	28.00	1.84 1.69-2.00 2			2.20

Table 22.--Vitamin composition of finfishes, whales, and products.

Common and Scientific Name	Description	Vitamin A I. U.	Thiamine μg	Riboflavin μg	Niacin mg Per 100 grams	Ascorbic Acid mg	Folic Acid μg	Vitamin B12 μg
	Dried & Seasoned		360.00	152.00	9.64			2.70
Catfish, Sea <u>Arius arius</u>	Muscle Raw				0.50	11.70		
Catfish, Sea <u>Arius leiotetocephalus</u>	Muscle Raw		692.00	126.00	4.08			
Catfish, Sea <u>Bagre macracanthus</u>	Muscle Raw		58.00					
Catfish, Sea <u>Bagre marinus</u>	Muscle Raw		40.00	80.00	1.60	0.00		
Catfish, Sea, Manila <u>Arius manillensis</u>	Muscle Raw Dried Salted & Dried	96.00	630.00 30.00 139.00	197.00 60.00 35.00	45.00 2.40 2.22		15.00	2.50
Catfish, Sea Ariidae	Muscle Raw Salted & Dried		73.00 66.00-80.00 2 140.00	85.00 80.00-90.00 2 40.00	1.85 1.50-2.20 2 2.20		15.00	2.35 2.20-2.50 2
Catfish, Stinging <u>Saccobranchus fossilis</u>	Muscle Raw Cooked Boiled Fried In Mustard Oil				0.81	9.30	0.75 0.62	4.04 1.36
Cero, Mackerel <u>Scomberomorus regalia</u>	Muscle Raw		55.00					
Characin <u>Prochilodus laticeps</u>	Muscle Raw		50.00	110.00	6.31			1.60
Characin Characidae	Muscle Raw		16.67	76.67	2.27			
Chub, Sea, Opaleye <u>Girella nigricans</u>	Muscle Raw	18.90						0.06
Cichlid Cichlidae	Muscle Raw Dried		30.00 80.00	50.00 610.00	1.50 5.80			
Cisco, Lake <u>Coregonus artedii</u>	Muscle Raw Cooked Baked Fried Dried Smoked Dried & Smoked Whole Fishmeal		87.60 27.00-126.00 23 100.00 85.00-128.00 3 88.75 79.00-98.00 4 92.00	 460.00	2.51 0.56-4.56 13 3.60 2.65-4.51 3 3.69 13.10 2.40 8.70 3.28		28.40	
Cod, Atlantic <u>Gadus morhua</u>	Muscle Raw	37.50 25.00-30.00 2	115.50 18.00-480.00 8	237.80 70.00-625.00 8	1.91 1.20-2.20 5	2.00		0.75 0.50-1.00 2

Table 22.--Vitamin composition of finfishes, whales, and products.

Common and Scientific Name	Description	Vitamin A I. U.	Thiamine μg	Riboflavin μg	Niacin mg Per 100 grams	Ascorbic Acid mg	Folic Acid μg	Vitamin B12 μg
	Canned		57.50 19.00-36.00 2	66.67 34.00-75.00 3	2.53 2.40-2.65 2			0.50
	Baked		38.00	90.00	2.09			
	Salted & Dried		69.00	37.00	1.58			1.25
	Smoked		35.00-103.00 2	75.00-97.00 2	1.49-1.66 2			1.11-1.40 2
Cod, Pacific <u>Gadus macrocephalus</u>	Muscle Raw		98.50 92.00-105.00 2	158.00			6.60	0.09
Cod Gadidae	Muscle Raw	35.00 10.00-60.00 2	92.00 30.00-267.00 10	131.90 31.00-325.00 12	2.52 0.20-6.70 17	2.90 0.00-6.70 3	1.75	2.31 0.45-10-80 6
	Canned Cooked				1.70			
	Steamed		240.00	180.00	1.60			
	Dried		112.25 19.00-250.00 4	345.17 150.00-564.00 6	4.25 0.00-11.00 6			1.51 0.04-3.60 3
	Salted		73.33 20.00-100.00 3	252.50 70.00-500.00 4	4.15 1.60-7.00 4			
	Salted & Dried		44.50 19.00-70.00 2	200.00 50.00-310.00 5	3.84 0.20-8.60 5			4.12 1.20-10.00 5
	Smoked		56.00	47.00 24.00-83.00 3	2.20 1.49-2.90 2			1.41 1.05-2.02 4
	Whole Raw		71.00	37.00	3.23			0.52
Coral Cod <u>Cephalopholis miniatus</u>	Muscle Raw		20.00	40.00	1.70			
Corb, Brown Meagre <u>Sciaena umbra</u>	Muscle Raw							2.27
Cornetfish Fistulariidae	Muscle Raw							0.20
Creville, Jack <u>Caranx carangus</u>	Muscle Salted & Dried		150.00	91.00	7.90			10.10
Croaker <u>Pseudosciaena amblyceps</u>	Muscle Raw	46.80						
Croaker <u>Pseudosciaena undovittata</u>	Muscle Raw	73.20						
Croaker <u>Sciaena coitor</u>	Muscle Raw				0.53	14.10		13.70
Croaker <u>Sciaena deliciosa</u>	Muscle Raw Salted & Dried	7.44	60.00 70.00	120.00 130.00	3.70 2.75			
Croaker <u>Sciaena diacanthus</u>	Muscle Raw	19.90	22.00	530.00	1.58			
Croaker <u>Sciaena schlegeli</u>	Muscle Raw	57.50						
Croaker, Atlantic <u>Micropogon undulatus</u>	Muscle Raw Cooked Baked		81.00 118.00	100.00 117.00	5.50 5.70			

Table 22.--Vitamin composition of finfishes, whales, and products.

Common and Scientific Name	Description	Vitamin A I. U.	Thiamine mg per 100 grams	Riboflavin mg per 100 grams	Niacin mg per 100 grams	Ascorbic Acid mg	Folic Acid mg	Vitamin B ₁₂ mg
	Whole Raw		155.00					
Croaker, Roncador <u>Ophioscion venezuelae</u>	Muscle Raw		115.00	65.00	4.18			1.70
Croaker, Smooth Scaled <u>Pseudosciaena anea</u>	Muscle Raw		28.00	59.00	2.32			2.52
	Dried		10.00	80.00	4.30			
	Salted & Dried		7.00	80.00	4.25			
Croaker, Smooth Scaled <u>Sciaena dussumieri</u>	Muscle Raw		30.00	47.00	3.40			
Croaker, Verrugato, Corb <u>Sciaena cirrosa</u>	Muscle Raw							6.12
Croaker, White, Nibe <u>Argyrosomus argentata</u>	Muscle Raw		71.00	81.00	2.70			0.20
Croaker Sciaenidae	Muscle Raw		70.00 50.00-90.00 2	90.00 60.00-50.00 4	3.00 1.70-4.80 4			2.50
	Canned In Oil	33.00	10.00	110.00	0.80			
	Salted & Dried		70.00 60.00-80.00 2	160.00 40.00-280.00 2	10.40			
Cusk <u>Brosme brosme</u>	Muscle Raw	30.00	41.50 32.00-51.00 2	143.50 94.00-180.00 4	2.71 2.33-3.00 3			1.00
	Cooked Baked		37.00	104.00	2.34			
Cusk-Eel <u>Lepophidium brevibarbe</u>	Muscle Raw		172.00 169.00-175.00 2	37.00	1.40			0.90
Cusk-Eel Ophidiidae	Muscle Raw			32.00	2.20		1.98	0.30
Cutlassfish <u>Trichiurus japonicus</u>	Muscle Raw	50.00						0.06
Cutlassfish, Ribbonfish <u>Trichiurus haumela</u>	Muscle Raw	57.00 50.00-64.00 2	78.00 16.00-140.00 2	103.00 76.00-130.00 2	3.10 3.00-3.20 2		6.31	1.13
Cutlassfish Trichiuridae	Muscle Raw		180.00	290.00	2.00 1.90-2.10 2			0.06
	Salted	17.00	90.00	140.00	2.90		6.30	1.10
Dogfish <u>Squalus mitsukurii</u>	Muscle Raw	22.00						
Dogfish, Cazon <u>Carcharias aethalorus</u>	Muscle Raw		26.00	45.00	2.41			
Dogfish, Smooth <u>Mustelus canis</u>	Muscle Raw		55.00	70.00	5.18			0.01

Table 22.--Vitamin composition of finfishes, whales, and products.

Common and Scientific Name	Description	Vitamin A I. U.	Thiamine <i>μg</i>	Riboflavin <i>μg</i>	Niacin mg Per 100 grams	Ascorbic Acid mg	Folic Acid <i>μg</i>	Vitamin B12 <i>μg</i>
Dogfish, Spiny <u>Squalus acanthias</u>	Muscle Raw	5080.09 405.00-9755.17 2	55.33 50.00-66.00 3	150.00	5.00		3.20	0.92 0.04-1.80 2
	Canned		40.00	83.00	6.29			1.20
Dogfish, White <u>Mustelus dorsalis</u>	Muscle Dried	9735.00						
Dogfish <u>Squalidae</u>	Muscle Raw	10900.00	40.00	110.00	2.90	0.00	3.20	1.80
Dolphin, Mai Mai, Dorado <u>Coryphaena hippurus</u>	Muscle Raw	179.25 25.50-333.00 2	20.00	70.00	6.10			0.60
Dory, John <u>Zeus japonicus</u>	Muscle Raw							0.03
Dragonet <u>Callionymus lyra</u>	Muscle Raw							4.70
Drepane, Concertinafish <u>Drepane punctata</u>	Muscle Raw		28.50 27.00-30.00 2	110.00 81.00-140.00 2	3.23 2.80-3.66 2			
Drum <u>Sciaena regiae</u>	Muscle Raw							9.40
Drum, Corvina <u>Sciaena gilberti</u>	Muscle Raw		75.00	105.00	2.90			
Drum, Dhoma <u>Sciaena glauca</u>	Muscle Raw		3420.00	2470.00				
Drum, Fresh Water <u>Aplodinotus grunniens</u>	Whole Fishmeal		205.00	480.00	3.55			17.00
Drum, Queenfish <u>Seriphus politus</u>	Muscle Salted & Dried		50.00	150.00	4.64			4.00
Drum <u>Sciaenidae</u>	Muscle Raw	30.00	65.00 30.00-100.00 2	174.00 70.00-282.00 3	2.35 0.63-3.93 3			
Eel, Conger <u>Conger conger</u>	Muscle Raw					1.00		
Eel, Conger <u>Conger myriaster</u>	Muscle Raw		60.00	40.00	5.00			
Eel, Conger <u>Congridae</u>	Muscle Raw	500.00	60.00	40.00	4.25 3.50-5.00 2			3.00
	Whole Raw			392.50				
Eel, Fresh Water <u>Anguilla aucklandii</u>	Muscle Raw	4578.50 4295.00-4862.00 2						
Eel, Fresh Water, American <u>Anguilla rostrata</u>	Muscle Raw			455.00 *-				

Table 22.--Vitamin composition of finfishes, whales, and products.

Common and Scientific Name	Description	Vitamin A I. U.	Thiamine mg	Riboflavin mg	Niacin mg Per 100 grams	Ascorbic Acid mg	Folic Acid mg	Vitamin B ₁₂ mg
Eel, Fresh Water, European <u>Anguilla anguilla</u>	Muscle Raw	3141.67 250.00-5700.00 3	120.00	1125.00 100.00-2150.00 2		4.00		0.60
Eel, Fresh Water, Japanese <u>Anguilla japonica</u>	Muscle Raw	2093.25 433.00-3753.50 2	190.00	190.00	2.80	0.95 0.20-1.70 2	69.05 13.10-125.00 2	0.87 0.60-1.00 3
	Cooked Broiled & Seasoned		70.00	20.00	3.50			
Eel, Fresh Water Anguillidae	Muscle Raw	2700.00 1500.00-4500.00 4	146.00 10.00-280.00 4	223.33 100.00-370.00 3	2.63 1.40-3.50 3	1.50		1.00
	Whole Raw	4000.00	200.00	350.00	1.50			
Eel, Moray <u>Gymnothorax kidako</u>	Muscle Raw							0.44
Eel, Moray <u>Muraena pardalis</u>	Muscle Raw							0.10
Eel, Moray Muraenidae	Muscle Raw		17.50 10.00-25.00 2	30.00	3.09			
Eel, Pike Conger, Silver <u>Muraenesox cinereus</u>	Muscle Raw	1010.50 21.00-2000.00 2	85.50 10.00-101.00 3	78.00 44.00-100.00 3	2.56 2.47-2.70 3			0.18
Eel, Snake <u>Ophicephalus argus</u>	Muscle Raw		53.00					0.04
Eel, Snake, Murrel <u>Ophicephalus punctatus</u>	Muscle Raw				1.00			
Eel, Snake, Murrel <u>Ophicephalus striatus</u>	Muscle Raw	17.00	23.75 0.00-50.00 4	75.00 30.00-120.00 2	2.33 0.50-4.20 3		45.70 27.09-55.00 3	1.52 1.00-2.55 3
	Cooked Boiled Fried						72.00	
	In Mustard Oil						64.00	0.30
	Dried		240.00	203.00	5.14			3.60
	Fermented			99.00	0.64			2.30
Eel, Snake Ophichthidae	Muscle Raw Cooked Fried				0.60			19.70
Eel, Spiny <u>Mastacembelus favus</u>	Muscle Raw		60.00					
Eel, Swamp, Field <u>Fluta alba</u>	Muscle Raw		40.00	220.00	1.80			
Eel, Swamp, Palos <u>Synbranchus bengalensis</u>	Muscle Raw	62.00	130.00	50.00	2.50			
Emperor <u>Lethrinus opercularis</u>	Muscle Raw		10.00	24.00	7.36		0.40	1.33 1.06-1.60 2

Table 22.--Vitamin composition of finfishes, whales, and products.

Common and Scientific Name	Description	Vitamin A I. U.	Thiamine µg	Riboflavin µg	Niacin mg Per 100 grams	Ascorbic Acid mg	Folic Acid µg	Vitamin B12 µg
Featherback <u>Notopterus notopterus</u>	Muscle Raw Smoked		30.00	172.00	0.84 4.43	5.60		2.90
Featherback, Chitala <u>Notopterus chitala</u>	Muscle Raw	33.00	70.00 40.00-120.00 3	70.00	8.50			
Featherback Notopteridae	Muscle Raw							13.20
Flathead, Indian <u>Platycephalus indicus</u>	Muscle Raw	70.00	23.00 19.00-30.00 3	90.00 30.00-150.00 3	7.12 4.30-12.00 3			
Flounder <u>Cleisthenes pinctorum herzensteini</u>	Muscle Raw		100.00	100.00	3.50	2.00	5.00	
Flounder <u>Limanda augustirostris</u>	Muscle Raw	30.00					5.00	
Flounder, Frog <u>Pleuronichthys cornutus</u>	Muscle Raw	73.00						
Flounder, Starry <u>Platichthys stellatus</u>	Muscle Raw		58.00	43.00				1.00
Flounder, Starry, Hiramé <u>Paralichthys olivaceus</u>	Muscle Raw	63.09 0.00-126.17 2	100.00	100.00	5.70	2.00	3.00	0.05
Flounder, Stone <u>Kareius bicoloratus</u>	Muscle Raw							0.10
Flounder, Winter <u>Pseudopleuronectes americanus</u>	Muscle Raw			201.50 68.00-335.00 2				
Flounder Bothidae/Pleuronectidae	Muscle Raw	110.00 30.00-400.00 7	110.77 30.00-400.00 13	83.72 20.20-200.00 10	3.36 1.70-5.25 10	1.67 0.00-3.00 3		2.98 0.10-10.00 4
	Cooked Fried		75.00	140.00	1.71			
Fluke <u>Pleuronectes flesus</u>	Muscle Raw	40.00	150.00	200.00	3.50			
Flyingfish <u>Cypselurus agoo</u>	Muscle Raw							0.25
Flyingfish, Small Scaled <u>Cypselurus oligolepis</u>	Muscle Raw		26.00	63.00	5.55			
Flyingfish Exocoetidae	Muscle Raw	10.00	15.00 10.00-20.00 2	85.00 80.00-90.00 2	4.00 4.00-4.00 2		2.80	
Gar Lepisosteidae	Muscle Raw	25.00						

Table 22.--Vitamin composition of finfishes, whales, and products.

Common and Scientific Name	Description	Vitamin A I. U.	Thiamine µg	Riboflavin µg	Niacin mg Per 100 grams	Ascorbic Acid mg	Folic Acid µg	Vitamin B ₁₂ µg
Garfish <u>Tylosurus giganteus</u>	Muscle Raw		4.00	37.00	0.86			1.92
Garfish, Foli <u>Belone belone</u>	Muscle Raw	30.00						
Garfish, Houndfish <u>Tylosurus crocodilus</u>	Muscle Raw			40.00	0.90			
Giant Perch <u>Lates calcarifer</u>	Muscle Raw		56.50 48.00-80.00 4	266.33 59.00-440.00 3	1.41 0.73-3.10 4	96.00	65.00	3.40
	Cooked							
	Boiled						3.30	1.00
	Fried							
	In Mustard Oil						2.30	0.50
	Unspecified						2.30	0.50
Goatfish, Ca'Phen <u>Parupeneus indicus</u>	Muscle Raw		43.00					
Goatfish, Yellow <u>Upeneoides sulphureus</u>	Muscle Raw	104.00	24.50	38.00	1.41		5.43	
Goatfish Mullidae	Muscle Raw		40.00	80.00	1.60			
Goby <u>Boleophthalmus boddarti</u>	Muscle Raw					0.50		
Goby <u>Gobius lota</u>	Muscle Raw					0.50		
Goby, Banner <u>Microgobius microlepis</u>	Muscle Raw		70.00	270.00	1.30			
Goby, Flathead <u>Glossogobius giurus</u>	Muscle Raw		23.67 13.00-38.00 3	41.75 40.00-43.50 2	2.23 0.32-3.20 3	3.10	16.03 8.10-20.00 3	3.14 2.20-4.10 4
	Cooked							
	Boiled						16.00	
	Fried							
	In Mustard Oil						8.50	2.20
Goby, Long tailed <u>Gobioneilus longicaudus</u>	Muscle Raw		71.00	270.00	1.30			
Goby, Pointed-tailed <u>Apocryptes lanceolatus</u>	Muscle Raw						26.00	2.60
	Cooked							
	Fried							
	In Mustard Oil						4.00	0.24
Goby, Sea Trout, Merluzza <u>Macrodon ancylodon</u>	Muscle Raw		108.50 54.00-163.00 2	100.00	5.96			0.80
Goby, Yellowfin <u>Gobius flavimanus</u>	Muscle Raw						10.50	0.70
Goby Gobiidae	Muscle Raw	470.50 50.00-891.00 2	84.67 54.00-100.00 3	112.00 50.00-174.00 2	1.92 1.83-2.00 2			
	Salted & Fermented		30.00	180.00	1.50			

Table 22.--Vitamin composition of finfishes, whales, and products.

Common and Scientific Name	Description	Vitamin A I. U.	Thiamine mg	Riboflavin mg	Niacin mg Per 100 grams	Ascorbic Acid mg	Folic Acid mg	Vitamin B ₁₂ mg
Goldfish, Funa <u>Carassius auratus</u>	Muscle Raw	82.22 67.50-96.95 2	50.00	70.00	2.40	2.05 1.70-2.40 2		0.05
Goosefish, Monkfish <u>Lophius piscatorius</u>	Muscle Raw	165.00	25.00					
Goosefish, Monkfish <u>Lophiomus setigerus</u>	Muscle Raw		30.00	60.00	5.00			0.02
Goosefish, Monkfish Lophiidae	Muscle Raw Cooked Parboiled	100.00	30.00 40.00	60.00 110.00	5.00 1.20	0.00		
Greeneye <u>Chlorophthalmus albatrossis</u>	Muscle Raw							1.10
Greenling, Atka, Mackerel <u>Pleurogrammus azonus</u>	Muscle Raw		90.00	40.00			7.40	
Greenling, Atka, Mackerel <u>Pleurogrammus monopterygius</u>	Muscle Raw						7.35	
Greenling, Masked <u>Hexagrammos octogrammus</u>	Muscle Raw		105.00	44.00				
Grouper <u>Epinephelus septemfasciatus</u>	Muscle Raw	143.00						
Grouper, Black <u>Garrupa nigrita</u>	Muscle Raw		170.00					
Grouper, Merou <u>Epinephelus aeneus</u>	Muscle Raw							1.30
Grouper, Red <u>Epinephelus morio</u>	Muscle Raw		112.00	374.00	1.40			
Grouper, Spotted <u>Epinephelus corallicola</u>	Muscle Raw Dried		38.00 10.00	35.00 10.00	4.30 2.60		8.80	9.10
Grouper, Yellowbelly <u>Epinephelus gigas</u>	Muscle Raw Cooked Baked Boiled		40.00 31.00 23.00	122.00 138.00 135.00	0.40 0.40			0.50 0.50 0.50
Grouper Serranidae	Muscle Cooked Baked Boiled		14.80 20.40	18.30 12.20	0.10			0.12 0.06
Grunt <u>Anisotremus scapularis</u>	Muscle Raw Cooked Baked	50.00	73.00 56.00-90.00 2	46.00 40.00-52.00 2	5.35 5.30-5.40 2	0.00		
Grunt <u>Parapristipoma trilineatum</u>	Muscle Raw	136.00	200.00	200.00	3.00		6.95 3.50-10.40 2	1.40
Grunt, Besugo, Bangkoknok <u>Pomadasy argyreus</u>	Muscle Raw		18.00	240.00	3.10			

Table 22.--Vitamin composition of finfishes, whales, and products.

Common and Scientific Name	Description	Vitamin A	Thiamine	Riboflavin	Niacin	Ascorbic Acid	Folic Acid	Vitamin B ₁₂
		I. U.	μg	μg	mg Per 100 grams	mg	μg	μg
Grunt, Dorade <u>Parapristipoma mediterraneum</u>	Muscle Raw		70.00	60.00	4.50			
Grunt, Silver Spotted <u>Pristipoma commersonii</u>	Muscle Raw		60.00	960.00	1.97			
Grunt, White <u>Haemulon plumieri</u>	Muscle Raw		58.00 34.00-80.00 3	46.00 32.00-60.00 2	5.40 2.19-8.60 2			
Grunt Pomadasyidae	Muscle Raw	150.00	145.00 90.00-200.00 2	165.00 130.00-200.00 2				
Guitarfish, Fiddlefish <u>Rhinobatus hynnicephalus</u>	Muscle Raw		70.00	80.00	1.70			
Guitarfish, Guitarra <u>Rhinobatus planiceps</u>	Muscle Salted & Dried	2285.00						
Gurnard, Red <u>Chelidonichthys kumu</u>	Muscle Raw	42.50 26.00-59.00 2	10.00	70.00	2.10		1.80	0.30
Haddock <u>Melanogrammus aeglefinus</u>	Muscle Raw	36.50 16.00-50.00 4	64.02 9.00-150.00 11	145.27 24.50-590.00 12	3.02 0.90-4.00 10		0.81	1.21 0.53-1.80 6
	Canned			57.20				
	Cooked							
	Baked		32.00	142.00	3.34			
	Fried							
	Breaded		35.30	70.60	3.20			
	Unspecified					2.40		
	Steamed		18.50	37.12	3.85	1.90		0.90
	Salted		130.00					
	Smoked		48.67 47.33-50.00 2	62.00 24.00-100.00 2	3.36 2.50-4.22 2			3.05 1.00-5.10 2
	Whole							
	Raw		53.00 26.00-80.00 2	21.00	7.82 3.39-12.25 2			2.03 1.26-2.80 2
	Offal							
	Fishmeal		80.00	270.00	12.25			2.80
Hake, European <u>Merluccius merluccius</u>	Muscle Raw	35.00	64.50 34.00-95.00 2	102.00 80.00-124.00 2	1.10 1.00-1.20 2	1.00		3.42 1.60-5.24 2
	Cooked							
	Baked		31.00	135.00	1.22			1.52
	Boiled		19.00	95.00	0.89			1.08
	Dried	62.00						
Hake, Pacific <u>Merluccius productus</u>	Whole FPC			577.00	7.61		44.91	20.80
Hake Gadidae	Muscle Raw		61.50 34.00-132.00 4	106.00 70.00-124.00 3	1.69 1.18-2.16 3			1.59
	Canned							
	In Olive Oil		15.00	160.00	7.50			
	Cooked							
	Baked		13.90	36.00	0.40			0.68
	Boiled		17.30	42.20	0.42			0.70

Table 22.--Vitamin composition of finfishes, whales, and products.

Common and Scientific Name	Description	Vitamin A I. U.	Thiamine μg	Riboflavin μg	Niacin mg Per 100 grams	Ascorbic Acid mg	Folic Acid μg	Vitamin B12 μg
	Whole Raw		35.00	125.00	0.70			
Halfbeak, Non-spotted <u>Hemirhamphus georgii</u>	Muscle Raw		4.00	42.00	3.05			1.30
Halfbeak Exocoetidae	Muscle Raw	17.00		40.00	3.00			1.30
Halibut, Arctic <u>Hippoglossus vulgaris</u>	Muscle Raw		70.00	180.00	6.80			
Halibut, Atlantic <u>Hippoglossus hippoglossus</u>	Muscle Raw		89.92 40.00-105.00	94.87 60.00-185.00	4.47 3.00-6.00			0.85 0.80-0.90
	Dark meat		5	5	3			2
	Cooked		35.00	250.00	3.10			5.00
	Baked		73.00					
	Grilled		92.00	83.00	7.58			
	Salted			140.00				
Halibut, Pacific <u>Hippoglossus stenolepis</u>	Muscle Raw		125.00 70.00-180.00	60.00	9.20			
			2					
Halibut Pleuronectidae	Muscle Raw	440.00	100.35 40.00-114.00	75.47 50.00-176.20	7.10 2.80-11.00	0.00	2.00	0.87 0.70-1.00
			6	7	8			3
	Cooked			93.00	10.92			
	Fried			86.00-100.00	8.85-13.00	34.60		
				2	2			
	Steamed		80.00	62.67 44.00-100.00	9.60 5.00-13.40			
				3	3			
Herring <u>Harengus minor</u>	Muscle Raw	275.00 250.00-300.00						
		2						
Herring, Anchova <u>Temnodon saltator</u>	Whole Raw		190.00	395.00	13.20			10.10
Herring, Atlantic <u>Clupea harengus</u>	Muscle Raw	161.57 124.70-210.00	82.60 15.00-300.00	266.00 136.00-414.00	4.53 3.90-5.43	2.70	1.60	10.00
		3	5	5	4			
	Canned							
	In Oil			210.00				
	Unspecified	223.30	15.00	186.67 170.00-200.00	4.80		1.60	8.00
				3				
	Smoked			400.00				
	Whole FPC		12.00	530.00	9.60			33.20
Herring, Bachiva, Bacha <u>Clupisoma garua</u>	Muscle Raw				0.61	11.00		
Herring, Deep Bodied <u>Sardinella perforata</u>	Muscle Raw		15.00 10.00-20.00	91.50 33.00-150.00	6.20 2.41-10.00			
			2	2	2			

Table 22.--Vitamin composition of finfishes, whales, and products.

Common and Scientific Name	Description	Vitamin A I. U.	Thiamine μg	Riboflavin μg	Niacin mg Per 100 grams	Ascorbic Acid mg	Folic Acid μg	Vitamin B12 μg
Herring, Fimbriated, Tunsoy <u>Sardinella fimbriata</u>	Muscle Raw	92.00	8.67 6.00-10.00 3	131.50 70.00-250.00 3	5.02 2.50-7.54 2			
	Dried		10.00	240.00	7.10			
	Salted & Smoked		6.00	245.00	7.09			
Herring, Fresh Water <u>Harengula tawilis</u>	Muscle Raw							3.37
Herring, Japanese <u>Clupanodon punctatus</u>	Muscle Raw						1.70	3.80
Herring, Machete <u>Ethmidium chilcae</u>	Muscle Raw		10.00	80.00	4.70			
	Cooked							
	Roasted	84177.70						
Herring, Pacific <u>Clupea pallasii</u>	Muscle Raw	100.00	64.33 20.00-150.00 3	195.67 150.00-220.00 3	2.20			1.72 1.44-2.00 2
	Canned							
	In Brine		20.00	160.00	1.60			
	Unspecified				0.25			
	Dried		90.00	55.00	3.15	20.00		
	Pickled			403.33				
	Salted		20.00	215.00 90.00-340.00 2	3.40			
	Smoked		10.00	310.00	9.00			
	Whole FPC							119.00 33.68-140.00 2
Herring, Round <u>Etrumeus micropus</u>	Muscle Raw							1.60
Herring, Round <u>Etrumeus teres</u>	Muscle Raw	60.00	20.00	80.00	8.50			
Herring, Wolf <u>Chirocentrus dorab</u>	Muscle Raw		27.50 20.00-35.00 2	154.00 58.00-250.00 2	3.79 0.99-6.59 2			
Herring Clupeidae	Muscle Raw	104.50 0.00-200.00 7	33.62 6.00-105.00 13	293.01 110.10-530.00 10	3.82 0.01-9.60 13			22.80 10.00-34.00 4
	Canned							
	Grilled	65.00	10.00	130.00	3.90			
	In Bouillon			240.00	3.20			10.70
	In Cream Sauce	90.00	30.00	200.00	3.20			
	In Mustard	43.00	20.00	170.00	2.90			
	In Oil							
	Drained	227.00						
	Smoked	40.00	40.00	150.00	3.60		1.60	
	Unspecified	62.00	22.00 20.00-24.00 2	190.00	4.48 3.40-5.57 2			
	In Tomato Sauce	75.00 40.00-110.00 2	85.05 60.00-110.10 2	232.50 180.00-285.00 2	3.31 2.60-3.80 3	1.00		5.25 1.30-9.20 2
	Kipperd			325.00				
	Dried	20.00	51.90 10.00-131.00 3	583.33 300.00-950.00 3	2.73 0.00-5.00 3			45.70
	Kipperd			370.00	3.66 3.13-4.80 4			1.50

Table 22.--Vitamin composition of finfishes, whales, and products.

Common and Scientific Name	Description	Vitamin A I. U.	Thiamine μg	Riboflavin μg	Niacin mg Per 100 grams	Ascorbic Acid mg	Folic Acid μg	Vitamin B12 μg
	Pickled Salted	160.00	20.00	235.00 170.00-300.00 2	3.00 2.00-4.00 2			
	Salted & Smoked Smoked	45.00	10.00	290.00 270.00-310.00 2	6.72 4.45-9.00 2			7.00 7.90 1.30-14.50 2
	Whole Raw Fishmeal	300.00	40.00 48.75 10.00-87.50 2	300.00 785.19 380.00-1320.00 8	4.00 9.56 6.86-14.16 6		40.40	14.00 33.07 25.80-58.80 6
	FPC		300.00	660.00	5.00		200.00	
Japanese fish <u>Labracoglossus argentiventris</u>	Muscle Raw	205.50						
Jewfish, California <u>Stereolepis gigas</u>	Muscle Raw		100.00	52.00	2.44			
Katsuo <u>Euthynnus (Katsuwonus) vagans</u>	Muscle Raw		292.00 61.00-523.00 2	484.50 40.00-929.00 2	18.35 12.20-24.50 2			9.35 2.50-16.20 2
Ladyfish <u>Elops saurus</u>	Muscle Raw				1.60			
Lamprey <u>Petromyzon fluviatilis</u>	Muscle Raw	20.00						
Lamprey Petromyzontidae	Muscle Raw Dried	25000.00 150000.00	850.00 1000.00	6000.00 6000.00	4.70 7.00			
Lance, Sand <u>Ammodytes americanus</u>	Whole Fishmeal		20.00	1250.00	8.91		32.10	17.70
Lance, Sand <u>Ammodytes personatus</u>	Muscle Raw		350.00					
Lance, Sand Ammodytidae	Muscle Raw	20.00	400.00	80.00	2.00			
Leatherjacket <u>Lichia glauca</u>	Muscle Salted & Dried	70.00	205.00	176.00	16.00			9.20
Leatherjacket <u>Oligoplites saurus</u>	Muscle Raw	421.00						
Leatherjacket, Yellow <u>Scomber lyson</u>	Muscle Raw Cooked Steamed		20.00 16.00		3.60 3.56		5.70	
Leerfish <u>Lichia amia</u>	Muscle Salted & Dried		400.00	53.00	9.55			3.10
Levovangan <u>Monotaxes grandoculis</u>	Muscle Raw		42.00	112.50	4.60			
Ling <u>Molva molva</u>	Muscle Raw	35.00		80.00	2.50 2.30-2.70 2			0.55 0.50-0.60 2
Ling Cod <u>Ophiodon elongatus</u>	Muscle Raw		46.00 43.00-49.00 2	55.50 38.00-73.00 2				10.80 3.60-18.00 2

Table 22.--Vitamin composition of finfishes, whales, and products.

Common and Scientific Name	Description	Vitamin A I. U.	Thiamine mg	Riboflavin mg	Niacin mg Per 100 grams	Ascorbic Acid mg	Folic acid mcg	Vitamin B12 mcg
Lizardfish <u>Saurida tumbil</u>	Muscle Raw		104.00	28.00	3.42			
Lizardfish Synodontidae	Muscle Raw		80.00	50.00	2.40	3.00		
Loach Cobitidae	Muscle Raw	100.00	10.00	200.00	5.00			
Longaray Ambassidae	Muscle Raw		11.00	39.00	1.53			
Longfish <u>Caranx mate</u>	Muscle Raw						13.83	5.88
Lookdown <u>Selene vomer</u>	Muscle Raw	163.00	463.00	90.00	6.03			1.40
Lumpfish <u>Cyclopterus lumpus</u>	Muscle Raw	60.00						
Maasbanker, Mackerel, Jack <u>Trachurus trachurus</u>	Muscle Raw	28.75 11.00-46.50 2	137.00 95.00-179.00 2	142.50 135.00-150.00 2	3.35 1.50-5.20 2		350.00	6.08 0.80-12.70 3
Mackerel, Atlantic <u>Scomber scombrus</u>	Muscle Raw	131.67 0.00-245.00 3	84.60 20.00-150.00 5	372.86 160.00-660.00 7	7.68 5.80-10.70 4	4.00	1.30	5.25 1.50-9.00 2
	Dark meat Canned	433.00	370.00 58.00	1380.00 220.00	9.70 5.80		1.30	11.00
				200.00-240.00 2				
	Salted & Smoked							12.00
Mackerel, Frigate <u>Auxis hira</u>	Muscle Raw	56.00						
Mackerel, Frigate <u>Auxis maru</u>	Muscle Raw	16.50						
Mackerel, Frigate <u>Auxis thazard</u>	Muscle Raw	75.00	71.55 43.00-100.10 2	267.00 144.50-390.00 2	16.22 15.64-16.80 2			0.40
	Dark meat							4.40
Mackerel, Horse <u>Trachurus capensis</u>	Muscle Salted & Dried		130.00	155.00	10.80			8.60
Mackerel, Horse Carangidae	Muscle Dried		60.01	310.64	4.59			
Mackerel, Jack <u>Caranx delicatissimus</u>	Muscle Raw					3.30		
Mackerel, Jack <u>Trachurus japonicus</u>	Muscle Raw	6.60	144.50 129.00-160.00 2	140.00	6.50	2.00		3.52 0.30-13.00 5
	Dark meat							9.50 7.80-11.20 2
	Canned Seasoned		50.00	90.00	2.00			
	Salted & Dried		30.00	150.00	7.00			8.60

Table 22.—Vitamin composition of finfishes, whales, and products.

Common and Scientific Name	Description	Vitamin A	Thiamine	Riboflavin	Niacin	Ascorbic Acid	Folic Acid	Vitamin B12
		I. U.	μg	μg	mg Per 100 grams	mg	μg	μg
Mackerel, Jack <u>Trachurus symmetricus</u>	Muscle Dried		30.00	110.00	11.30			
Mackerel, Jack Carangidae	Muscle Raw	40.00	175.00 120.00-240.00 5	192.50 100.00-330.00 4	7.20 2.90-14.40 5	1.00		
	Canned Seasoned Salted & Dried		50.00 30.00	90.00 150.00	0.20 7.00			
	Whole Fishmeal		63.00	1640.00	21.80			36.00
Mackerel, King, Seer <u>Scomberomorus commersonii</u>	Muscle Raw	43.00	40.33 23.00-70.00 3	129.00 88.00-170.00 2	4.50 2.70-6.60 3			1.23 0.08-2.38 2
	Dried Salted & Dried		50.00 22.00 8.00-40.00 3	20.00 80.41 22.00-192.00 3	9.70 7.46 2.91-12.00 2			3.20
Mackerel, Long-jawed <u>Rastrelliger canagurta</u>	Muscle Raw	390.00 69.00-711.00 2	33.82 10.00-56.00 4	329.12 66.00-920.50 4	8.80 2.85-17.90 4			7.75
	Brined Dried Salted & Dried	5.32 6.35 10.00	48.00 63.00	2517.50 3150.00 120.50 68.00-173.00 2	10.63 11.74 7.46 7.42-14.58 2			6.00
Mackerel, Pacific Chub <u>Scomber japonicus/colias</u>	Muscle Raw	79.00 44.00-120.00 4	126.60 46.00-265.00 5	182.60 270.00-350.00 5	12.50 8.40-15.90 5	3.00	3.80 1.80-5.80 2	3.10 0.90-9.50 6
	Dark meat		265.00	676.00	7.90		5.80	4.20
	Canned Dried Salted	26.67	26.00 30.00 20.00	330.00 50.00 100.00	8.70 25.00 6.50		0.60	
Mackerel, Short-bodied, Hasa Hasa <u>Rastrelliger brachysomus</u>	Muscle Raw		39.00 20.00-58.00 2	105.00 90.00-120.00 2	8.19 6.58-9.80 2			8.60
	Smoked		19.00	85.00	9.75			
Mackerel, Spanish <u>Scomberomorus maculatus</u>	Muscle Raw		144.50 113.00-180.00 4	183.50 180.00-187.00 2	5.50 4.12-6.89 2			1.40

Table 22.--Vitamin composition of finfishes, whales, and products.

Common and Scientific Name	Description	Vitamin A I. U.	Thiamine mg	Riboflavin mg	Niacin mg Per 100 grams	Ascorbic Acid mg	Folic Acid mg	Vitamin B12 mg
Mackerel, Spotted Spanish <i>Scomberomorus guttatus</i>	Muscle Raw		140.00	295.00 100.00-675.00 3	82.00			
	Cooked Fried In Coconut Oil			120.00				
Mackerel Scombridae	Muscle Raw	100.00 10.00-175.00 6	102.00 26.00-150.00 17	192.47 30.00-500.00 15	8.63 1.20-21.40 14	1.65 0.00-5.10 4	0.92 0.60-1.24 2	19.49 0.70-90.00 6
	Dark meat Canned		880.00	280.00	19.80			8.00
	Boiled	5.00	20.00	100.00	6.50			
	Drained	96.66		200.00		1.20		
	Marinated		100.00	400.00	8.30			9.40
	In Natural Juice		38.00	650.00	7.50			
	In Oil		67.50 55.00-80.00 2	417.75 407.50-428.00 2	8.04 6.78-9.30 2			9.05
	In Portuguese Sauce		27.00	563.00	8.60			
	In Tomato Sauce		72.50 45.00-100.00 2	517.50 315.00-720.00 2	7.56 6.33-8.80 2			5.40
	Unspecified	232.40 26.70-438.10 2	52.00 50.00-53.00 3	190.82 110.00-262.45 3	9.51 5.70-13.50 3		0.60	4.57
	Cooked Baked		137.00	450.00	9.16			
	Steamed		76.00	54.00	15.80			0.70
	Dried		30.00	50.00	25.00			
	Pickled		33.00		5.67			
	Salted	5.00	66.00	173.00	9.75			4.50
	Salted & Dried		10.00	70.00	14.50			
	Smoked		20.00	227.50 80.00-375.00 2	8.20 6.60-9.80 2			12.00
Menhaden, Atlantic <i>Brevoortia tyrannus</i>	Whole Fishmeal			935.00	15.40			24.00
Menhaden Clupeidae	Whole Raw Fishmeal	420.00		392.23 316.70-460.00 3	5.79 5.28-6.60 3			15.40
Milkfish <i>Chanos chanos</i>	Muscle Raw	536.50 400.00-673.00 2	56.50 13.00-100.00 2	77.00 54.00-100.00 2	6.44		15.91	3.40
	Dried		20.00	30.00	8.00			
	Smoked		16.00	28.00	7.72			
Minnow, Common <i>Zacco platypus</i>	Muscle Raw	74.40 70.00-78.80 2	30.00	100.00	3.50	0.00		
Mojarra <i>Diapterus evermanni</i>	Muscle Raw		96.00 92.00-100.00 2	90.00	4.45			3.40
Mojarra, Spotted <i>Gerres filamentosus</i>	Muscle Raw	62.00	31.00	85.00	5.31		21.40	1.89

Table 22.--Vitamin composition of finfishes, whales, and products.

Common and Scientific Name	Description	Vitamin A I. U.	Thiamine mg	Riboflavin mg	Niacin mg Per 100 grams	Ascorbic Acid mg	Folic Acid mg	Vitamin B12 mg
Mola <u>Amblypharynx godonmola</u>	Muscle Raw					5.20		
Moonfish, Pacific <u>Vomer declivifrons</u>	Muscle Raw		35.00	87.00	10.73			
Mullet <u>Mugil kalaartii</u>	Muscle Raw		55.00	550.00				
Mullet <u>Mugil oeur</u>	Muscle Raw		100.00	1415.00	44.95			
Mullet, Bhangar <u>Mugil tade</u>	Muscle Raw				1.77			
Mullet, Black Fin <u>Mugil melinopterus</u>	Muscle Raw Dried		41.00	297.00 100.00	4.73 2.50		2.65	1.89
Mullet, Ca'Doi <u>Mugil affinos</u>	Muscle Raw		20.00					
Mullet, Green-backed <u>Mugil dussumieri</u>	Muscle Canned		1.00	99.00	2.53			
Mullet, Grey, Boi <u>Mugil speigleri</u>	Muscle Raw	400.00						
Mullet, Long-finned <u>Mugil vaigiensis</u>	Muscle Raw	106.00	23.00	186.00	5.72		29.55	
Mullet, Parsey <u>Mugil parsia</u>	Muscle Raw		30.00		0.77	6.20	51.50 39.00-64.00 2	4.60
	Cooked Boiled Fried In Mustard Oil						5.30 4.50 3.80-5.20 2	2.20 1.50
Mullet, Striped <u>Mugil cephalus</u>	Muscle Raw	150.00	85.50 6.00-250.00 4	82.00 50.00-100.00 4	5.16	0.60 0.00-1.20 2	8.50	0.22 0.15-0.30 2
Mullet Mugilidae	Muscle Raw	150.00	52.31 10.00-86.93 3	149.79 100.00-230.00 3	3.02 1.18-5.20 7			
	Cooked Fried In Oil Salted & Dried	33.00	10.00 10.00	30.00 345.00	16.50 3.85			10.00
Nemipterid, Longtailed <u>Nemipterus japonicus</u>	Muscle Raw	95.00	10.00	30.00	1.40			
Nemipterid, Ribbon-finned <u>Nemipterus caeniopterus</u>	Muscle Raw Dried Salted & Dried	138.00	33.00 20.00 16.00	19.00 10.00 11.00	2.74 6.50 6.48		7.62	2.83
Nemipterid, Roncador <u>Nemipterus virgatus</u>	Muscle Raw		40.00					0.02
Palometa, Permit <u>Trachinotus goodei</u>	Muscle Raw		110.00	94.00	3.02			

Table 22.--Vitamin composition of finfishes, whales, and products.

Common and Scientific Name	Description	Vitamin A	Thiamine	Riboflavin	Niacin	Ascorbic Acid	Folic Acid	Vitamin B ₁₂
		I. U.	μg	μg	mg Per 100 grams	mg	μg	μg
Parrotfish <u>Scarus mechiopunctatus</u>	Muscle Raw		5.00	52.00	1.36			
Parrotfish, Loro <u>Sparisoma squalidum</u>	Muscle Raw		36.00 19.00-53.00 2	70.00	1.54			0.06
Perch <u>Acerina cernua</u>	Muscle Raw	145.00						
Perch <u>Lucioperca lucioperca</u>	Muscle Raw	60.00				1.12		
Perch, Blue, Walleye <u>Stizostedion vitreum glaucus</u>	Muscle Raw Cooked Baked Fried		250.00 370.00 290.00	160.00 210.00 230.00	2.30 2.03 2.59			
Perch, Chinese <u>Siniperca chuatsi</u>	Muscle Raw	30.00						
Perch, Climbing <u>Anabas testudenicus</u>	Muscle Raw Cooked Fried In Mustard Oil		24.67 19.00-30.00 3	361.00	2.23 0.79-3.67 2	32.00	4.60 4.00-5.20 2	1.90
							4.00	1.10
Perch, Climbing, Gourami <u>Trichogaster fasciata</u>	Muscle Raw		99.00					
Perch, Climbing, Gourami <u>Trichogaster pectoralis</u>	Muscle Raw Salted & Dried	218.00	1000.00 60.00	190.00 663.00	2.00 2.77		0.99 2.70	
Perch, Climbing, Gourami <u>Trichogaster trichopterus</u>	Muscle Raw		40.00					
Perch, Climbing Anabantidae	Muscle Raw Dried		20.00 60.01	270.00 310.64	3.20 4.59			
Perch, Ocean Serranidae	Muscle Raw Cooked Fried Breaded			110.00	2.00			1.00
			94.00	105.90	1.80			
Perch, Sand <u>Psammoperca waigiensis</u>	Muscle Raw		150.00	150.00	1.50			
Perch, Yellow <u>Perca flavescens</u>	Muscle Raw Cooked Fried	40.00	60.00	120.00 70.00-170.00 2	1.78	1.18		
			60.00	270.00	1.93			
Perch Percidae	Muscle Raw FPC	17.00	75.00 0.00-150.00 2	74.00 28.00-120.00 2	1.25 0.68-1.70 3	2.20		
					5.10			

Table 22.--Vitamin composition of finfishes, whales, and products.

Common and Scientific Name	Description	Vitamin A	Thiamine	Riboflavin	Niacin	Ascorbic Acid	Folic Acid	Vitamin B ₁₂
		I. U.	μg	μg	mg Per 100 grams	mg	μg	μg
Pike, Northern <u>Esox lucius</u>	Muscle Raw	70.00	270.00					
Pike Esocidae	Muscle Raw	0.00						
Pilchard, European <u>Clupea pilchardus</u>	Muscle Raw		105.00 100.00-111.00 2	213.33 50.00-390.00 3	2.00 1.50-2.50 2	0.80		34.06
	Canned In Oil Drained	333.00	90.00		1.30			
Pilchard, Japanese <u>Sardinops melanosticta</u>	Muscle Raw	83.00					2.00	1.81 1.12-2.50 2
	Canned In Oil In Tomato Sauce Plain Seasoned Dried Salted		50.00 30.00 40.00 40.00 90.00 30.00	80.00 60.00 130.00 130.00 300.00 200.00	7.00 8.00 9.00 9.00 13.00 10.10			
Pilchard, Pacific <u>Sardinops (Sardina) caerulea</u>	Muscle Raw Canned Drained In Natural Juices In Oil Drained Unspecified In Tomato Sauce Unspecified	26.70 26.67 230.00 281.25 26.68	7.00 10.00 10.00	5400.00 300.00 290.00 250.00-330.00 300.00	5.00 7.40		0.50 0.80	
Pilchard Clupeidae	Muscle Canned In Tomato Sauce Whole Fishmeal			250.00 1290.00	5.04			
Pintadilla <u>Cheilodactylus variegatus</u>	Muscle Raw		160.00	80.00	3.40			
Plaice, American <u>Hippoglossoides platessoides</u>	Muscle Raw	30.00						
Plaice, American <u>Pleuronectes platessa</u>	Muscle Raw	40.00	200.00	130.00	4.00			1.60 1.00-2.20 2
Plaice Pleuronectidae	Muscle Raw		105.00	195.00				1.00
Pollock, Saithe, Coalfish <u>Pollachius virens</u>	Muscle Raw	35.00	66.67 45.00-105.00 3	134.33 80.00-200.00 3	2.48 1.57-3.40 2			2.95 1.80-3.50 4

Table 22.--Vitamin composition of finfishes, whales, and products.

Common and Scientific Name	Description	Vitamin A I. U.	Thiamine µg	Riboflavin µg	Niacin mg Per 100 grams	Ascorbic Acid mg	Folic Acid µg	Vitamin B ₁₂ µg
	Cooked Baked		50.00	130.00	1.60			
	Offal Fishmeal	270.00	480.00	580.00			56.50	6.60
Pollock, Walleye <u>Theragra chalcogramma</u>	Muscle Raw		170.00	170.00			3.10	0.30
	Dark meat							2.40
	Whole Raw		180.00	240.00				0.08
Pollock Gadidae	Muscle Raw	32.00	95.00 45.00-160.00 3	133.33 100.00-200.00 3	3.03 1.90-4.20 3			1.05 1.00-1.10 2
	Dried		100.00	150.00	11.00			
Pomfret <u>Parabramis brama</u>	Muscle Raw	29.50						
Pomfret, Silver <u>Pampus argenteus</u>	Muscle Raw		190.00	80.00	0.40			
Pompano, Florida <u>Trachinotus carolinus</u>	Muscle Raw		562.00	118.00	3.00			
Pompano, Pacific <u>Neptomenus crassus</u>	Muscle Raw	5.10	90.00	60.00	8.10	0.00		
Pompano Carangidae	Muscle Raw		263.33 110.00-413.00 3	200.33 90.00-400.00 3	4.32 3.00-5.71 3			
	Salted & Dried		300.00	110.00	12.80			
Porgy <u>Pagrosomus unicolor</u>	Muscle Raw						0.45	
	Dark meat						0.70	
Porgy, Large-eyed Dentex <u>Dentex macrophthalmus</u>	Muscle Raw		57.00 30.00-84.00 2	92.00 39.00-145.00 2	5.08 3.30-6.85 2			1.84 0.88-2.80 2
	Salted & Dried		30.00	39.00	6.85			2.80
Porgy, Pargo <u>Pagrus ehrenbergii</u>	Muscle Salted & Dried		80.00	22.00	6.75			2.50
Porgy Sparidae	Muscle Raw	90.00	106.80 20.00-160.00 5	97.00 50.00-145.00 5	4.08 3.25-5.60 3			1.37
	Cooked Baked		36.10	43.50	0.60			0.28
	Boiled		29.40	21.80	0.90			0.08
	Dried		30.00	40.00	0.68			
	Salted & Dried		80.00	20.00	6.70			
Puffer, Swellfish <u>Sphoeroides pardalis</u>	Muscle Raw		50.00					0.08
Puffer, Swellfish <u>Sphoeroides porphyreus</u>	Muscle Raw		200.00	100.00				
Puffer, Swellfish <u>Sphoeroides spengleri</u>	Muscle Raw							1.85

Table 22.--Vitamin composition of finfishes, whales, and products.

Common and Scientific Name	Description	Vitamin A I. U.	Thiamine mg	Riboflavin mg	Niacin mg Per 100 grams	Ascorbic Acid mg	Folic Acid mg	Vitamin B ₁₂ mg
Puffer, Swellfish <i>Tetraodontidae</i>	Muscle Raw	10.00	20.00			0.00		
Rabbitfish <i>Siganus fuscescens</i>	Muscle Raw							0.06
Rabbitfish <i>Siganus (Teuthis) javis</i>	Muscle Raw		202.50 160.00-245.00 2	128.50 127.00-130.00 2	4.74 4.40-5.09 2			
	Dried		5.00	80.00	5.60			
	Salted & Fermented		10.00	210.00	3.70			
Ratfish <i>Chimaera barbouri</i>	Muscle Raw						2.70	
Ray, Eagle <i>Actobatus peruvianus</i>	Muscle Cooked Roasted		1590.00	150.00	3.85			
Redfish, Ocean Perch <i>Sebastes marinus</i>	Muscle Raw	125.00						1.00
	Whole Fishmeal							9.40
Redfish <i>Scorpaenidae</i>	Muscle Dried		148.00	48.00	3.51			
	Whole Fishmeal			660.00	4.10			
Roach <i>Rutilus rutilus</i>	Muscle Raw	30.00				13.00 0.96-25.04 2		
Rockfish <i>Sebastes marmoratus</i>	Muscle Raw							0.04
Rockfish, Kichijj <i>Sebastes macrochir</i>	Muscle Raw						0.90	
Rockfish, Red <i>Sebastes matsubarae</i>	Muscle Raw		150.00	150.00	3.00			
Rockfish, Red <i>Sebastes ruberrimus</i>	Muscle Raw Dried		55.00	111.00				12.00
Rockfish <i>Scorpaenidae</i>	Muscle Raw		55.00 29.00-81.00 2	121.50 90.00-153.00 2				
Runner, Rainbow <i>Elagatis bipinnulata</i>	Muscle Raw		54.00	58.00	5.97			
Sablefish <i>Anoplopoma fimbria</i>	Muscle Raw	1586.00	105.00 97.00-113.00 2	88.50 88.00-89.00 2				
Salmon, Atlantic <i>Salmo salar</i>	Muscle Raw Canned	40.00	80.00	140.00 110.00	8.00			

Table 22.--Vitamin composition of finfishes, whales, and products.

Common and Scientific Name	Description	Vitamin A	Thiamine	Riboflavin	Niacin	Ascorbic Acid	Folic Acid	Vitamin B ₁₂
		I. U.	μg	μg	mg Per 100 grams	mg	μg	μg
Salmon, Cherry <u>Oncorhynchus masou</u>	Muscle Raw							2.00
Salmon, Chinook <u>Oncorhynchus tshawytscha</u>	Muscle Raw	455.00 310.00-600.00 2	100.33 100.00-101.00 3	222.75 200.00-231.00 4	7.20			
	Canned	229.65 229.30-230.00 2	65.00	185.00	7.25			
Salmon, Chum <u>Oncorhynchus keta</u>	Muscle Raw	46.90 28.00-82.70 3	90.00 80.00-100.00 2	79.50 59.00-100.00 2				0.14
	Dark meat Canned	117.00 49.60 28.60-60.20 3	20.00	160.00	7.10			
	Offal Fishmeal							27.00
Salmon, Coho <u>Oncorhynchus kisutch</u>	Muscle Raw		173.50 87.00-260.00 2	164.50 109.00-220.00 2	7.00	1.30		
	Canned	80.00	65.00 30.00-100.00 2	140.00 100.00-180.00 2	7.40			
	Salted		80.00 60.00-100.00 2	125.00 100.00-150.00 2	7.00 6.00-8.00 2			
	Smoked		100.00	150.00	10.00			
Salmon, Land-locked <u>Oncorhynchus rhodurus</u>	Muscle Raw	57.50						
Salmon, Longtooth <u>Otolithus ruber</u>	Muscle Raw	508.00						
Salmon, Pink <u>Oncorhynchus gorbusha</u>	Muscle Raw	108.65 100.00-117.30 2	171.00 143.00-220.00 3	56.00 46.00-70.00 3	7.00			
	Dark meat Canned	244.00						
	Boiled		50.00	130.00	6.00			
	Unspecified	62.54 10.10-99.10 5	27.82 8.81-50.00 5	151.95 130.00-188.20 4	6.27 3.88-8.00 4			
	Salted		150.00	150.00	9.00			
	Offal Fishmeal							19.00
Salmon, Sockeye <u>Oncorhynchus nerka</u>	Muscle Raw	82.00 10.00-154.00 2	135.50 108.50-150.00 3	128.17 72.00-222.50 3			4.26	0.19 0.12-0.26 2
	Canned	233.91 91.30-304.34 4	25.40 20.00-30.80 2	204.67 130.00-264.00 3	4.50 0.35-7.21 3			
Salmon Salmonidae	Muscle Raw	192.10 8.00-322.00 9	127.46 30.00-348.00 13	162.83 99.00-220.00 11	7.38 5.63-8.80 15	9.00	30.32 0.50-88.30 3	2.99 2.07-4.00 3

Table 22.--Vitamin composition of finfishes, whales, and products.

Common and Scientific Name	Description	Vitamin A	Thiamine	Riboflavin	Niacin	Ascorbic Acid	Folic Acid	Vitamin B ₁₂
		I. U.	μg	μg	mg Per 100 grams	mg	μg	μg
	Canned							
	Boiled	10.00	20.00	120.00	7.00			
	Dark meat							
	Drained	156.65						
		68.30-245.00						
		2						
	Drained						6.30	
	In Olive Oil				4.35			
	Unspecified	170.12	29.83	126.78	6.76	0.76	1.66	4.44
		80.00-300.00	4.40-150.00	8.00-292.00	2.70-7.81		0.50-5.00	2.00-6.89
		8	14	9	12		4	2
	Cooked							
	Fried			170.00	6.90			
	Unspecified		116.00	144.47	6.78		38.14	
				124.00-164.94	6.51-7.05			
				2	3			
	Cured	20.00	100.00	150.00	6.00			7.00
	Salted		287.50	100.00	8.00			7.00
	Salted & Smoked							
	Smoked		105.00	170.00	7.50			
	Offal							
	Fishmeal			900.00				
Sandfish	Muscle							
<u>Arctoscopus japonicus</u>	Raw	17.00	100.00	50.00				7.80
	Dried & Salted		40.00	80.00				
Sardine	Muscle							
<u>Clupanodon pseudohispanicus</u>	Raw		9.00	350.00	9.74			9.00
Sardine, Indian	Muscle							
<u>Sardinella longiceps</u>	Raw	50.00	51.67	177.00	8.73			
			10.00-135.00	67.00-394.00	7.90-10.35			
			3	3	3			
	Dried		10.00	105.00	14.49			
	Smoked		9.67	91.00	5.01			
			9.00-10.00	90.00-93.00	5.00-5.02			
			3	3	3			
Sardine, Pacific	Muscle							
<u>Sardinops sagax</u>	Raw							17.00
Sardine, Spotted	Muscle							
<u>Sardinella sirum</u>	Raw						9.80	1.81
	Dried		10.00	110.00	14.50			
Sardine	Muscle							
<u>Clupeidae</u>	Raw	229.25	83.33	228.78	8.15	1.00		
		60.00-303.00	20.00-270.00	53.20-387.00	3.90-10.50			
		4	9	8	6			
	Canned							
	Drained	220.00	20.00	170.00	4.80			
	In Oil							
	Drained			0.11				
	Smoked		45.00	270.00	4.40			
	Unspecified	311.86	30.20	147.50	3.84			10.00
		136.00-710.00	10.00-50.00	20.00-325.00	0.43-5.70			
		5	5	6	6			
	In Olive Oil		57.00	410.00	4.16			
					3.50-4.83			
					2			
	In Tomato Sauce							
	Drained			0.18				

Table 22.--Vitamin composition of finfishes, whales, and products.

Common and Scientific Name	Description	Vitamin A I. U.	Thiamine μg	Riboflavin μg	Niacin mg Per 100 grams	Ascorbic Acid mg	Folic Acid μg	Vitamin B12 μg
	Smoked Unspecified	30.00	45.00 27.50 10.00-45.00 2	290.00 286.66 270.00-300.00 2	4.10 5.76 5.30-6.20 3			10.00
	Marinated Not Drained Unspecified	29.70 188.33 30.00-357.00 6	84.84 9.00-272.00 13	308.92 32.00-485.00 12	6.86 3.83-9.33 10		0.50	6.06 0.16-12.30 9
	Cooked Boiled Dried		474.00 400.00-428.00 2					
	Salted & Dried	200.00	30.00	300.00	28.00			
	Salted Half Dried	60.00	30.00	100.00	10.00			
	Smoked	400.00 387.00-413.00 2						
	Whole Raw	200.30 0.60-400.00 2	600.00					
	Fishmeal			487.10 436.30-550.00 3	6.92 6.20-7.45 3			
Saury, Pacific <u>Cololabis saira</u>	Muscle Raw	1074.08 58.25-3044.00 3	50.40 48.00-54.00 5	112.40 87.00-132.00 5	6.00	1.00 0.00-2.00 2		4.30 2.20-6.40 2
	Canned Half Dried Seasoned With Tomato Dried & Seasoned Salted		40.00 60.00 90.00 40.00 40.00	100.00 100.00 140.00 150.00 110.00	7.00 7.00 9.00 8.00 7.00			
Sawfish <u>Pristidae</u>	Muscle Raw		140.00	190.00	4.10	0.00		
Scad, Big-Bodied <u>Decapterus macrostoma</u>	Muscle Raw	154.00 122.00-185.20 2	109.25 49.50-169.00 2	194.00	10.97		6.58	16.76 0.18-8.58 4
	Canned Salted & Dried		18.00 20.00	89.00 50.00	12.31 16.20			
Scad, Big-eyed <u>Caranx crumenophthalmus</u>	Muscle Raw		26.50 23.00-30.00 2	72.50 65.00-80.00 2	5.78 3.20-8.36 2			4.49
	Dried Smoked		20.00 10.00	50.00 80.00	13.50 8.70			
Scad, Golden <u>Caranx kalla</u>	Muscle Raw		15.00	77.00		3.90		
Scad <u>Carangidae</u>	Offal Fishmeal		280.00	900.00	12.10			30.00
Scorpionfish, Akodai <u>Sebastes iracundus</u>	Muscle Raw						0.40	
Scorpionfish, Longnose <u>Pontinus castor</u>	Muscle Raw	0.00	40.00	80.00		0.00		

Table 22.--Vitamin composition of finfishes, whales, and products.

Common and Scientific Name	Description	Vitamin A I. U.	Thiamine μg	Riboflavin μg	Niacin mg Per 100 grams	Ascorbic Acid mg	Folic Acid μg	Vitamin B ₁₂ μg
Scorpionfish <i>Scorpaenidae</i>	Muscle Raw							7.60 3.20-12.00 2
Sculpin <i>Cottus pollux</i>	Muscle Raw Dried	0.00	100.00	150.00		0.00		6.10
Sea Cucumber <i>Cucumaria miniata</i>	Whole Raw							1.20
Sea Cucumber <i>Holothuria edulis</i>	Muscle Raw					0.00		
Sea Cucumber <i>Molpodia arenicola</i>	Whole Raw							2.00
Sea Cucumber <i>Stichopus japonicus</i>	Muscle Raw Dried Dried & Soaked	150.00 33.00	70.00 40.00 10.00	90.00 70.00 20.00	0.50 0.40 0.10			
Sea Cucumber, Red <i>Stichopus californias</i>	Muscle Raw Whole Raw		35.00	90.00				1.70
Sea Cucumber <i>Holothuroidae</i>	Muscle Raw	10.00	10.00 10.00-10.00 2	20.00	0.90			
Sea Robin, Gurnard, Grey <i>Trigla gurnardus</i>	Muscle Raw	65.00						
Sea Robin, Gurnard, Yellow <i>Trigla lucerna</i>	Muscle Raw	30.00				1.00		
Sea Robin <i>Triglidae</i>	Muscle Raw		90.00					
Sea Trout, Spotted <i>Cynoscion nebulosus</i>	Muscle Salted & Dried		90.00	31.00	8.85			5.30
Shad <i>Hilsa reevesii</i>	Muscle Raw	50.00						
Shad, American <i>Alosa sapidissima</i>	Muscle Raw Canned Salted		150.00 140.00	240.00 185.00	8.40			
Shad, Gizzard <i>Anodontostoma chacunda</i>	Muscle Raw Salted & Dried Smoked	138.00	10.50 10.00 30.00	98.50 140.00 60.00	3.14 3.80 4.10			3.84
Shad, Gizzard <i>Dorosoma cepedianum</i>	Muscle Raw		100.00	150.00	5.00			
Shad, Indian <i>Hilsa ilisha</i>	Muscle Raw Cooked Boiled Fried In Mustard Oil	4531.20	30.00		2.11 0.76-4.70 3	25.90 24.10-27.70 2	11.00	4.00 4.50 0.16

Table 22.--Vitamin composition of finfishes, whales, and products.

Common and Scientific Name	Description	Vitamin A I. U.	Thiamine μg	Riboflavin μg	Niacin mg Per 100 grams	Ascorbic Acid mg	Folic Acid μg	Vitamin B12 μg
Shad, Slender <u><i>Ilisha elongata</i></u>	Muscle Raw Dried, Soaked, & Drained	139.90		120.00	5.20			
Shad Clupeidae	Muscle Raw Cooked Baked With Fat & Bacon	0.00 23.50	 129.40	 258.80	 8.60			
Shadefish, Meagre <u><i>Sciaenidae aquila</i></u>	Muscle Salted & Dried		85.00	45.00	10.40			
Shark, Blue <u><i>Carcharhinus glaucus</i></u>	Muscle Raw	30.00	110.00	110.00	0.90			
Shark, Cat Scyllorhinidae	Muscle Raw							1.25
Shark, Gummy <u><i>Mustelus antarcticus</i></u>	Muscle Canned Boiled In Oil Seasoned		50.00 20.00 60.00	105.00 60.00 85.00	11.00 11.00 9.00			
Shark, Hammerhead, Smooth <u><i>Sphyrna zygaena</i></u>	Muscle Raw		14.00	81.00	3.21			
Shark, Mackerel, Blue-Pointer <u><i>Lamna glauca</i></u>	Muscle Salted & Dried		130.00	81.00	12.10			3.40
Shark, Mackerel Isuridae	Muscle Raw		80.00	100.00	7.00			2.60
Shark, Porbeagle, Mackerel <u><i>Lamna cornubica</i></u>	Muscle Raw			150.00	7.50			2.50
Shark, Requiem Carcharhinidae	Muscle Raw		16.25 5.00-20.00 4	43.00 19.00-80.00 3	3.25 2.10-4.40 2			
Shark, Sand Tiger Odontaspidae	Muscle Raw	51.00						
Shark, Sharpnose <u><i>Scoliodon palasorrah</i></u>	Muscle Raw Dried		25.00	33.00 60.00	6.55			
Shark, Sharpnose, Pacific <u><i>Scoliodon longurio</i></u>	Muscle Raw		20.00	80.00	3.40	0.00		
Shark, Shortfin Mako <u><i>Isurus oxyrinchus</i></u>	Muscle Raw			95.00	9.90			1.20
Shark, Smoothhound Triakidae	Muscle Raw		26.00	27.00	5.60			0.50
Sheathfish <u><i>Kryptopterus kryptopterus</i></u>	Muscle Raw	67.00	10.00	40.00	1.40			
Sheathfish <u><i>Parasilurus asotus</i></u>	Muscle Raw						1.90	0.06
Shiner, Ghost <u><i>Netropis buehanani</i></u>	Muscle Raw Cooked Boiled							1.39 3.00

Table 22.--Vitamin composition of finfishes, whales, and products.

Common and Scientific Name	Description	Vitamin A I. U.	Thiamine mg	Riboflavin mg	Niacin mg Per 100 grams	Ascorbic Acid mg	Folic Acid mg	Vitamin B ₁₂ mg
	Fried In Mustard Oil							0.54
Silverside <u>Atherina forskali</u>	Muscle Dried, Rinsed, & Drained	33.00	160.00	40.00				
Silverside <u>Atherina presbyter</u>	Muscle Raw			130.00				
Silverside Atherinidae	Muscle Raw		10.00	50.00	4.50	0.00		
Skate, Flatback <u>Raja kenoi</u>	Muscle Raw	13.50	230.00	80.00	1.30			
Skate, Thornback <u>Raja clavata</u>	Muscle Raw	35.00						
Skate Rajidae	Muscle Raw	10.00	17.50 10.00-25.00 2	10.00	2.00	0.00		
Sleeper <u>Oxyeleotris marmorata</u>	Muscle Raw		26.00					
Slimy, Soapy <u>Leiognathus argenteus</u>	Muscle Raw		40.50					
Slimy, Soapy, Ponyfish <u>Leiognathus equula</u>	Muscle Raw		0.20	40.00	1.90		23.58	3.58
Slipmouth, Black-Finned <u>Leiognathus daura</u>	Muscle Raw	33.00	43.50 17.00-70.00 2	38.50 37.00-40.00 2	2.08 1.94-2.50 2			
Slipmouth Leiognathidae	Muscle Raw		13.00	40.00	2.04			
Smelt <u>Osmerus eperlanus</u>	Muscle Raw	200.00						
Smelt, Eulachon <u>Thaleichthys pacificus</u>	Whole Raw		35.00					
Smelt, Lake <u>Osmerus mordax</u>	Muscle Raw		10.00	127.00 120.00-134.00 2	1.25			
	Dried		5.00					
Smelt, Pond <u>Hypomesus olidus</u>	Muscle Raw	100.00	130.00	360.00	2.00			
Smelt, Sweet, Ayu <u>Plecoglossus altivelis</u>	Muscle Raw	107.95 95.90-120.00 2	34.90 29.80-40.00 2	100.00	3.00	0.93 0.00-2.80 3	6.30	0.21
Smelt Osmeridae	Muscle Raw			122.85 120.00-125.70 2	1.45		3.66	3.44

Table 22.--Vitamin composition of finfishes, whales, and products.

Common and Scientific Name	Description	Vitamin A I. U.	Thiamine B ₁ μg	Riboflavin B ₂ μg	Niacin mg Per 100 grams	Ascorbic Acid C mg	Folic Acid μg	Vitamin B ₁₂ μg
	Whole Raw	100.00	130.00	350.00				
Snapper <u>Lutianus analis</u>	Muscle Raw		40.00					
Snapper <u>Lutianus rivulatus</u>	Muscle Raw	186.90						
Snapper, Grey <u>Lutianus griseus</u>	Muscle Raw		170.00					
Snapper, Malabar <u>Lutianus malabaricus</u>	Muscle Raw		70.00	131.00	5.21			
Snapper, Pargo <u>Lutianus colorado</u>	Muscle Raw		94.00	64.00	2.50			
Snapper, Red <u>Lutianus campechanus</u> (blackfordii)	Muscle Raw		125.50 76.00-175.00 2	48.00	1.82			
Snapper Lutianidae	Muscle Raw		67.50 46.00-90.00 4	69.33 38.00-110.00 3	3.35 2.50-4.70 3	1.60 0.00-3.20 2		0.30
	Cooked Unspecified		105.00	129.00	2.82			
Snook, Constantino <u>Centropomus robalito</u>	Muscle Raw		98.00	4.00	0.68			
Snook, Robalo <u>Centropomus armatus</u>	Muscle Raw		346.00	74.00	0.93			
Snook Centropomidae	Muscle Raw		200.00 50.00-350.00 2	65.00 60.00-70.00 2	2.00 0.90-3.10 2			
Sole <u>Cluiderma asprillum</u>	Muscle Raw						2.90	
Sole <u>Eopsetta grigorjewi</u>	Muscle Raw							0.10
Sole <u>Microstomus kitaharae</u>	Muscle Raw	40.00						
Sole <u>Microstomus stelleri</u>	Muscle Raw						4.00	
Sole, Dover <u>Microstomus pacificus</u>	Muscle Raw		59.00	57.00				
Sole, English <u>Parophrys vetulus</u>	Muscle Raw		62.00	44.00				0.80
Sole, European <u>Solea vulgaris</u>	Muscle Raw Cooked Baked Boiled		81.00 50.00 74.00	120.00 114.00 98.00	3.79 3.55 2.90			1.55 1.57 1.51

Table 22.--Vitamin composition of finfishes, whales, and products.

Common and Scientific Name	Description	Vitamin A I. U.	Thiamine μg	Riboflavin μg	Niacin mg Per 100 grams	Ascorbic Acid mg	Folic Acid μg	Vitamin B ₁₂ μg
Sole, Flathead <u>Hippoglossoides elassodon</u>	Muscle Raw		80.50 41.00-120.00 2	392.00 51.00-733.00 2			3.05	
Sole, Lemon <u>Microstomus kitt</u>	Muscle Raw		90.00	80.00	3.50			1.50 0.80-2.20 2
Sole, Petrale <u>Eopsetta jordani</u>	Muscle Raw		68.00	49.00				
Sole, Rex <u>Glyptocephalus zachirus</u>	Muscle Raw		38.00	47.00				
Sole, Rock <u>Lepidopsetta bilineata</u>	Muscle Raw		62.00	37.00				
Sole Soleidae/Pleuronectidae	Muscle Raw	44.80	73.00 60.00-88.10 4	50.00	1.42 1.13-1.70 2			
Spadefish <u>Chaetodipterus faber</u>	Muscle Raw		147.50 137.00-158.00 2	170.00	4.97			2.60
Spadefish <u>Scatophagus argus</u>	Muscle Raw	98.00	21.00	151.00	5.26			2.63
Sprat <u>Sprattus sprattus</u>	Muscle Raw	215.50 140.00-291.00 2	36.00					1
	Canned Smoked In Oil In Tomato Sauce Unspecified Smoked	306.00 281.00	30.00 30.00	325.00 325.00	6.70 5.70			10.80 11.70
	Whole Raw	1140.00	42.50 40.00-45.00 2	260.00	2.40 0.01-4.80 2			10.55 10.50-10.60 2
	Canned	123.00	822.00					33.50
Stargazer <u>Uranoscopus japonicus</u>	Muscle Raw							0.09
Steenbras, Sand, Seebes <u>Lithognathus mormyrus</u>	Muscle Raw	40.00						
Stingray, Blue Spotted <u>Dasyatis kuhlii</u>	Muscle Raw		38.00 36.00-40.00 2	48.00 46.00-50.00 2	2.49			
Stingray, Marbled <u>Dasyatis uarnak</u>	Muscle Raw		61.50 43.00-80.00 2	40.00 30.00-50.00 2	4.48 4.37-4.60 2			

Table 22.--Vitamin composition of finfishes, whales, and products.

Common and Scientific Name	Description	Vitamin A I. U.	Thiamine μg	Riboflavin μg	Niacin mg Per 100 grams	Ascorbic Acid mg	Folic Acid μg	Vitamin B12 μg
Stingray <i>Dasyatidae</i>	Muscle Raw Salted & Dried	31.50	20.00 160.00	139.00	8.93			5.30
Sturgeon <i>Acipenser sturio</i>	Muscle Raw	700.00						
Sucker, Carp <i>Carpoides meridionalis</i>	Muscle Raw		36.00	50.00	1.98			
Sucker, Common <i>Catostomus commersonii</i>	Muscle Raw Cooked Baked Dried Smoked		4.50 4.00-5.00 2		1.22 1.19-1.25 3			
Sunfish, Largemouth Bass <i>Centrarchidae</i>	Muscle Raw Dried		101.00	28.00	0.48 2.12			
Surfperch, Sea Chub <i>Ditrema temmincki</i>	Muscle Raw	62.15						0.07
Surgeonfish <i>Acanthurus bleekeri</i>	Muscle Raw Cooked Unspecified		27.00	26.00	3.82		9.99	0.60 0.56
Surgeonfish <i>Prionurus microlepidotus</i>	Muscle Raw					1.30		
Surgeonfish <i>Xesurus scalprum</i>	Muscle Raw							0.40
Swordfish <i>Xiphias gladius</i>	Muscle Raw Canned Cooked Broiled Broiled With Butter Dried	1595.00 1585.00-1600.00 3 1680.00 2290.00 2059.00 965.00	54.33 40.00-70.00 3 13.00 25.00 35.30 26.00	77.25 49.00-110.00 4 47.00 34.00 47.00 92.00	7.60 6.20-9.10 4 15.30 10.00 10.90 7.10	2.00	2.04	0.56 0.10-1.00 3
Tarpon, Bidbid <i>Elops hawaiiensis</i>	Muscle Raw		90.00	44.50 39.00-50.00 2	3.05 2.10-4.00 2			
Tarpon, Buan-Buan <i>Megalops cyprinoides</i>	Muscle Raw		16.00	60.00	5.11			
Tench <i>Tinca tinca</i>	Muscle Raw	30.00	220.00					
Therapon <i>Therapon plumbeus</i>	Muscle Raw Dried		70.00	390.00	4.20			9.20
Therapon <i>Therapon oxyrhynchus</i>	Muscle Raw	28.50						
Therapon, Large Scaled, Banded Grunter <i>Therapon theraps</i>	Muscle Raw		28.00	81.00	6.22			2.65

Table 22.--Vitamin composition of finfishes, whales, and products.

Common and Scientific Name	Description	Vitamin A I. U.	Thiamine μg	Riboflavin μg	Niacin mg Per 100 grams	Ascorbic Acid mg	Folic Acid μg	Vitamin B ₁₂ μg
Therapon, Tigerfish <u>Therapon jarbua</u>	Muscle Raw		21.00	63.00	5.13			
Therapon Theraponidae	Muscle Raw		20.00	70.00	4.50			2.70
Threadfin <u>Polynemus indicus</u>	Muscle Raw	172.00	40.00	160.00	1.51			
Threadfin <u>Polynemus paradiseus</u>	Muscle Raw		31.00 22.00-40.00 2	36.00 20.00-52.00 2	2.66 1.83-3.50 2		70.00	8.00
	Cooked Boiled Fried In Mustard Oil Dried			70.00			16.00	1.00
			84.70	310.60	4.59		19.50	0.47
Threadfin, Four-rayed <u>Polynemus tetradactylus</u>	Muscle Raw Salted & Dried		20.00 90.00	50.00 257.00	1.80 5.36			6.70
Threadfin, Small-mouth <u>Polynemus microstoma</u>	Muscle Raw		19.00	110.00	4.57			
Threadfin Polynemidae	Muscle Salted & Dried		80.00	310.00	4.60			
Tilapia, Mozambique Mouthbrooder <u>Tilapia mossambica</u>	Muscle Raw	58.00 17.00-99.00 2	30.00	120.00	3.10	0.95	5.72	2.08 2.07-2.10 2
Tilefish Branchiostegidae	Muscle Raw	58.50 17.00-100.00 2	115.00 80.00-150.00 2	155.50 111.00-200.00 2	2.90 2.80-3.00 2			
Tonguefish Cynoglossidae	Muscle Raw		50.00	150.00	3.30			
Torpedo, Panga <u>Megalaspis cordyla</u>	Muscle Raw		70.00	128.00 126.00-130.00	8.40 6.00-10.81 2			
Trevally <u>Caranx mertensi</u>	Muscle Raw		170.00	580.00				
Trevally, Great, Talakitok <u>Caranx sexfasciatus</u>	Muscle Raw Dried	124.50	122.00 110.00	81.00 20.00	5.52 6.80			9.10
Triggerfish <u>Monacanthus chinensis</u>	Muscle Raw				0.43			
Triggerfish <u>Monacanthus cirrhifer</u>	Muscle Raw	3273.50						
Triggerfish Balistidae	Muscle Raw		40.00	60.00				
Trout <u>Salmo clarkii</u>	Muscle Raw		56.00	93.00				
Trout, Brook <u>Salvelinus fontinalis</u>	Muscle Raw			93.00 65.00-135.00 3				1.54 0.08-3.00 2

Table 22.--Vitamin composition of finfishes, whales, and products.

Common and Scientific Name	Description	Vitamin A I. U.	Thiamine μg	Riboflavin μg	Niacin mg Per 100 grams	Ascorbic Acid mg	Folic Acid μg	Vitamin B ₁₂ μg
Trout, Brown <u>Salmo trutta</u>	Muscle Raw		90.00	365.00 50.00-680.00 2		2.00		
Trout, Dolly Varden <u>Salvelinus malma</u>	Muscle Raw		61.00	38.00				
Trout, Lake <u>Salvelinus namaycush</u>	Muscle Cooked Baked Fried		100.00 100.00	130.00 160.00	2.19 1.89			
Trout, Rainbow <u>Salmo gairdneri</u>	Muscle Raw	20.00	107.75 75.50-140.00 2	183.83 150.00-201.50 3	5.00	2.20		3.00 1.01-5.00 2
Trout Salmonidae	Muscle Raw Canned Whole Raw	91.30 40.60-142.00 2 188.60	86.56 10.00-200.00 9	72.22 9.00-210.00 8 160.00	4.46 2.73-7.80 9			4.50 4.00-5.00 2
Tuna, Albacore <u>Thunnus alalunga</u>	Muscle Raw Canned In Oil Drained In Olive Oil Salted & Dried		12.50 170.00 136.00 70.00-190.00 2	68.80 350.00 129.00 118.00-140.00 2	8.19 9.10 22.89 22.40-23.35 2			0.17 9.60 4.30-12.90 2
Tuna, Albacore, Long-finned <u>Tonbo magura</u>	Muscle Raw							0.20
Tuna, Big-eye <u>Thunnus obesus</u>	Muscle Raw Dark meat	129.00	156.50 57.00-256.00 2	117.80 30.40-263.00 3	10.80 7.30-14.30 2			3.35 0.50-6.20 2
Tuna, Black <u>Promethichthys prometheus</u>	Muscle Raw	56.17 39.00-66.10 3						0.09
Tuna, Bluefin <u>Thunnus thynnus</u>	Muscle Raw Dark meat Canned	963.00	166.67 100.00-250.00 3 380.00 330.00-430.00 2 89.00	96.67 60.00-150.00 3 785.00 780.00-790.00 2 13.60	11.10 10.00-12.00 2			15.86 0.27-47.00 3 22.90 7.80-38.00 2
Tuna, Skipjack <u>Euthynnus pelamis</u>	Muscle Raw Dark meat Canned In Oil Seasoned Unspecified Cooked Unspecified Dried Salted & Dried	30.02 24.80-35.25 2 44.00	93.33 30.00-190.00 3 520.00 50.00 190.00 20.00 30.00 190.00	76.50 8.00-150.00 4 690.00 60.00 140.00 150.00 275.00 118.00	21.95 18.00-24.50 3 12.20 11.00 10.00 16.00 40.00 23.30	7.25 2.00-12.50 2 14.60	186.55 3.10-370.00 2	66.50 1.90-250.00 4 16.50 12.90

Table 22.--Vitamin composition of finfishes, whales, and products.

Common and Scientific Name	Description	Vitamin A I. U.	Thiamine μg	Riboflavin μg	Niacin mg Per 100 grams	Ascorbic Acid mg	Folic Acid μg	Vitamin B ₁₂ μg
Tuna, Skipjack <i>Scombridae</i>	Whole Fishmeal	300.00	540.00	1130.00	50.00			25.00
	Muscle Raw	40.00	30.00	150.00	18.00	2.00		
	Whole Fishmeal			640.00	14.20			34.00
Tuna, Yellowfin <i>Thunnus albacares</i>	Muscle Raw	30.00 20.00-40.00 2	211.33 100.00-434.00 3	70.80 26.00-150.00 5	12.17 9.80-14.50 3	1.00	1.92 0.64-3.20 2	0.52 0.08-1.10 3
	Canned In Oil Seasoned Unspecified		50.00 70.00 80.00	130.000 30.00 150.00	12.00 8.00 11.00			
	Whole Raw			140.00	22.40			4.30
	Offal Fishmeal			420.00	6.70			22.00
	Muscle Raw	46.33 20.00-94.00 3	100.00 80.00-163.00 5	157.20 56.00-320.00 5	10.98 7.50-15.90 5		0.60	2.75 0.70-4.80 2
	Canned Baby Food Drained	61.53 26.60-80.00 3	50.00	80.00 120.00	12.80			
Tuna <i>Scombridae</i>	In Oil Drained	40.12 11.25-82.40 3	29.75 12.50-47.00 2	124.40 117.60-131.20 2	10.70 9.50-11.90 2		0.60	
	Unspecified	125.00 50.00-200.00 2	54.33 40.00-83.00 3	145.67 90.00-227.00 3	10.06 6.07-12.80 3			
	Unspecified	220.50 220.00-221.00 2	69.78 25.00-201.00 7	85.18 39.64-140.00 5	11.42 9.00-14.00 8		0.45	1.41 0.55-2.50 6
	Cooked Steamed Salted & Dried		76.00 130.00	54.00 160.00	15.80 10.80			0.70
	Whole Fishmeal	27100.00	7.00	683.31 560.00-880.00 4	10.85 6.60-15.20 4			26.28 20.00-33.00 3
	Muscle Raw	39.00	68.00 60.00-84.00 3	60.00 40.00-80.00 2	1.05 0.60-1.50 2			1.25 1.00-1.50 2
	Smoked			170.00	1.50			0.60
	Muscle Raw Cooked Fried		75.00				2.90	0.70
Turbot <i>Reinhardtius hippoglossoides</i>	Muscle Raw							
Turbot <i>Reinhardtius matsuurae</i>	Muscle Raw Cooked Fried							
Turbot <i>Scophthalmus maximus</i>	Muscle Raw	45.00		910.00	2.30			
Turbot, Arrowtooth <i>Atheresthes stomias</i>	Muscle Raw		60.00	52.00				
Turbot, Indian <i>Psettodes erumei</i>	Muscle Raw						1.22	6.42

Table 22.--Vitamin composition of finfishes, whales, and products.

Common and Scientific Name	Description	Vitamin A I. U.	Thiamine μg	Riboflavin μg	Niacin mg Per 100 grams	Ascorbic Acid mg	Folic Acid μg	Vitamin B12 μg
Turbot <u>Pleuronectidae</u>	Muscle Raw		18.00	118.35 100.00-136.70 2				
	Cooked Steamed		20.00	150.00				
Viperfish <u>Chauliodus sloani</u>	Muscle Raw		50.00					
Whale <u>Balaenoptera musculus</u>	Muscle Raw	275.00	486.00	3130.00	5.07			
Whale, Fin <u>Balaenoptera phekaleus</u>	Muscle Raw	275.00	357.00	2500.00	5.34			
Whale Unspecified	Muscle Raw	2500.00						
	Dried Fishmeal			600.00 1060.00	12.80			80.00 7.90
	Muscle With Bone Fishmeal			379.00				3.50
	Whole Fishmeal			397.00	9.00			
Whitefish <u>Coregonus oxyrhynchus</u>	Muscle Raw	120.00						
Whitefish, Lake <u>Coregonus clupeaformis</u>	Muscle Raw		140.00	120.00	2.99			
	Cooked Baked		150.00	110.00	2.99			
	Fried		170.00	150.00	2.71			
Whitefish Salmonidae	Offal Fishmeal			650.00				
Whiting <u>Merlangus merlangus</u>	Muscle Raw		90.00					
Whiting, Australian <u>Sillago sihama</u>	Muscle Raw	53.50 0.00-107.00 2	35.50 21.00-50.00 2	80.00 60.00-100.00 2	6.12 5.40-6.85 2			
Whiting, Blue <u>Micromesistius poutassou</u>	Muscle Raw		80.00	90.00	1.80			
Wolffish, Atlantic <u>Anarhichas lupus</u>	Muscle Raw	375.00						2.00
Wrasse <u>Duymaeria flagellifera</u>	Muscle Raw							0.38 0.03-0.72 2
Wrasse <u>Pseudolabrus japonicus</u>	Muscle Raw	48.36						3.00 0.50-5.30 2
Wrasse, Peacock <u>Crenilabrus pavo</u>	Muscle Raw					1.00		
Wrasse, Spinola <u>Labrus turdus</u>	Muscle Raw					1.00		
Yellowtail Carangidae	Muscle Raw	40.00	140.00	100.00	7.00	2.00		
	Canned In Oil							
	Smoked		50.00	90.00	6.60			
Zanthe <u>Abramis vimba</u>	Muscle Raw					0.86		

1/ Average of the means obtained from the literature cited.

2/ Range of the means found in literature cited.

3/ Number of mean values, which were reported in the literature cited.

4/ Method of processing was not clearly described or the fish was identified only by common name.

Table 23.--Vitamin composition of crustaceans and products.

Common and Scientific Name	Description	Vitamin A I. U.	Thiamine μg	Riboflavin μg	Niacin mg Per 100 grams	Ascorbic Acid mg	Folic Acid μg	Vitamin B ₁₂ μg
Crab <u>Hemigrapsus oregonensis</u>	Whole Raw Without Shell							4.90
Crab <u>Portunus sanguinolatus</u>	Muscle Raw		8.00	500.00		14.20		
Crab <u>Portunus trituberculatus</u>	Muscle Raw							1.80
Crab, Blue <u>Callinectes sapidus</u>	Muscle Raw	5.00	83.40 ^{1/} 50.00-140.00 ^{2/} 5 ^{2/}	45.00 ^{1/} 30.00-60.00 ^{2/} 2 ^{2/}	2.70	3.00		
	Canned		115.50 1.00-230.00 2	147.00 144.00-150.00 2	2.48	12.00	0.40	
Crab, Blue, Deep Sea <u>Portunus pelagicus</u>	Muscle Raw		45.63 10.88-87.00 3	477.33 68.00-870.00 3	2.43 ^{1/} 1.06-3.94 ^{2/} 3 ^{2/}	15.20	13.80	5.57
Crab, Bombay <u>Charybdis cruciata</u>	Muscle Raw		12.30	840.00				
Crab, Chinese <u>Eriocheia sinensis</u>	Muscle Raw	201.21	271.81	98.84	3.88			
Crab, Dungeness <u>Cancer magister</u>	Muscle Raw		176.00	20.00				
Crab, Edible <u>Cancer pagurus</u>	Muscle Raw	90.00	135.00	247.50 145.00-350.00 2	2.80	3.50		
	Cooked Unspecified ^{4/}		230.00	150.00				
Crab, Hermit <u>Pagurus hirsutiusculus</u>	Whole Raw Without Shell							9.60
Crab, King <u>Paralithodes camtschatica</u>	Muscle Raw	10.00	86.66 10.00-240.00 3	56.66 20.00-130.00 3	3.33 2.50-5.00 3			
	Canned Boiled	10.00	10.00	2.00				
Crab, Necora, Cangrejos <u>Cancer polydon</u>	Muscle Cooked Roasted			1100.00	2.00	0.00		
Crab, Red <u>Podaphehalmus vigil</u>	Muscle Cooked Unspecified			30.00				
Crab, Samoan <u>Scylla serrata</u>	Muscle Raw	887.00	130.90 2.20-840.00 7	420.88 118.00-940.00 9	1.46 1.00-2.34 9	13.10	56.63	2.22
	Cooked Unspecified		3.75 3.00-4.50 2	510.50 297.00-724.00 2	1.05 0.70-1.40 2			

Table 23.--Vitamin composition of crustaceans and products.

Common and Scientific Name	Description	Vitamin A I. U.	Thiamine μg	Riboflavin μg	Niacin mg Per 100 grams	Ascorbic Acid mg	Folic Acid μg	Vitamin B ₁₂ μg
	Whole							
	Raw		2.68 0.43-4.30 5	413.50 310.00-555.00 6	1.20 0.99-1.50 6			
Crab, Small <u>Potamon grapsoides</u>	Muscle Raw		50.00	789.00	2.88		53.27	25.22
Crab, Spider <u>Fulvia muticum</u>	Muscle Raw				2.50			
Crab, Spider, Spinous <u>Maia squinado</u>	Muscle Raw					2.00		
Crab Unspecified	Muscle Raw	150.00	79.71 30.00-140.00 7	201.50 60.00-395.00 6	2.51 1.37-3.00 9	7.00 ^{1/} 1.00-13.00 ^{2/} 2 ^{2/}	44.25 ^{1/} 35.20-53.30 ^{2/} 23 ^{2/}	8.70 ^{1/} 3.90-13.50 ^{2/} 23 ^{2/}
	Canned		46.00	74.80 58.00-84.00 3	29.24 2.47-82.40 3	1.90	0.30	5.23 0.46-10.00 2
	Cooked Boiled		100.00	430.00 150.00-710.00 2	2.50			0.50
	Canned Unspecified		50.00 60.00	60.00 80.00	2.50 0.44			
	Dressed		50.00	250.00				
	Paste		60.00	185.00				43.90
	Salted	26.50 20.00-33.00 2	90.00 80.00-100.00 2	265.00 30.00-500.00 2	2.10 2.00-2.20 2			
	Meal			790.00	3.70			
Crayfish <u>Astacus fluviatilis</u>	Muscle Raw					4.50		
Crayfish <u>Astacus leptodactylus</u>	Muscle Raw					1.26		
Crayfish Unspecified	Muscle Raw		150.00	95.00 60.00-130.00 2	2.40	5.00		2.70
Lobster <u>Homarus vulgaris</u>	Muscle Raw		157.50 150.00-165.00 2	130.00		5.00		
Lobster, European <u>Homarus gammarus</u>	Muscle Raw	65.00						
Lobster, Northern <u>Homarus americanus</u>	Muscle Raw			55.00				
Lobster, Norway <u>Nephrops norvegicus</u>	Whole Cooked Boiled	2.92						
Lobster, Spiny, Japanese <u>Panulirus regius</u>	Muscle Raw		12.30					
Lobster Unspecified	Muscle Raw	17.00	81.40 7.00-130.00 5	57.86 46.00-80.00 7	2.26 1.24-4.25 7	2.00	0.56 0.55-0.56 2	0.48 0.46-0.50 3
	Canned		32.50 30.00-35.00 2	65.25 60.50-70.00 2	2.22 2.20-2.23 2			

Table 23.--Vitamin composition of crustaceans and products.

Common and Scientific Name	Description	Vitamin A I. U.	Thiamine μg	Riboflavin μg	Niacin μg Per 100 grams	Ascorbic Acid mg	Folic Acid μg	Vitamin B ₁₂ μg
	Cooked Unspecified		10.00	45.50 41.00-50.00 2	1.72 1.50-1.93 2			
Shrimp <u>Crangon allmani</u>	Muscle Raw	40.00						
	Whole Cooked Boiled	32.00						
Shrimp <u>Crangon vulgaris</u>	Muscle Raw	85.00 1/ 20.00-150.00- 23/2/						
Shrimp <u>Cryptops caementarius</u>	Muscle Raw		20.00	130.00	1.40			
Shrimp <u>Penaeus incisipes</u>	Muscle Raw		6.00	29.00	3.74 2.37-5.12 2			
Shrimp <u>Penaeus semisulcatus</u>	Muscle Raw						26.53	
Shrimp, Alaskan, Sidestripe <u>Pandalus dispar</u>	Muscle Raw		47.00	133.00				
Shrimp, Bagda <u>Palaemon carcinus</u>	Muscle Raw					6.50		
Shrimp, Brine <u>Artemia salina</u>	Whole Dried			930.00		0.00		
Shrimp, Fresh Water Unspecified	Muscle Raw	80.00 60.00-100.00 2	43.00 39.00-50.00 3	120.25 80.00-140.00 4	1.76 0.80-2.20 4			
Shrimp, Indian <u>Palaemonetes vulgaris</u>	Muscle Raw	129.00						
Shrimp, Indian <u>Penaeus carinatus</u>	Muscle Raw	201.21	70.60	98.84	3.88			
Shrimp, Indian <u>Squilla mantis</u>	Muscle Raw					2.00		
Shrimp, Indian Prawn <u>Penaeus styliferus</u>	Muscle Raw	297.00	90.00					
Shrimp, Jumbo <u>Penaeus monodon</u>	Muscle Raw		17.00	54.00	3.97			2.99
Shrimp, Opossum, Kuruma <u>Penaeus japonicus</u>	Muscle Raw Dried		100.00 100.00	150.00 300.00	1.80 5.00			
Shrimp, Pink, Maine <u>Pandalus borealis</u>	Muscle Raw		75.75 57.00-90.00 4	194.25 142.00-250.00 4				
Shrimp, White <u>Penaeus indicus</u>	Muscle Raw		8.00	45.00 v.	3.47			

Table 23.--Vitamin composition of crustaceans and products.

Common and Scientific Name	Description	Vitamin A I. U.	Thiamine μ g	Riboflavin μ g	Niacin mg Per 100 grams	Ascorbic Acid mg	Folic Acid μ g	Vitamin B ₁₂ μ g
Shrimp, White <u>Penaeus schmitti</u>	Whole Raw		49.00					
Shrimp, White <u>Penaeus setiferus</u>	Muscle Raw Canned		50.00	70.00	1.64		1.80	
Shrimp Unspecified	Muscle Raw	188.88 2.20-1030.00 7	42.20 10.00-150.00 24	65.52 13.00-160.00 25	2.54 0.77-4.87 24	2.28 2.00-3.00 6	9.64 3.00-29.28 5	3.72 0.90-8.12 7
	Canned							
	Boiled		40.00	40.00	2.00			
	Drained	61.53	15.00	30.00	1.38			
	Dry Pack	56.66	9.00		1.50			
					0.77-2.23 2			
	Wet Pack	60.00	8.00		0.84 0.33-1.36 2			
	Unspecified	59.60 58.80-60.00 3	10.97 4.50-23.50 7	31.23 0.03-69.60 8	126.00 0.22-2.23 11		1.80	0.83 0.82-0.83 2
	Cooked							
	Boiled							
	Dried		90.00	97.00	3.37			
	Unspecified	10.00			2.00			
	Dried		48.00	123.00	2.22		9.00	
	Unspecified		17.28	48.86	0.79		2.93	
			5.00-45.00 7	20.00-119.00 7	0.17-3.00 7		2.00-4.00 3	
	Dried	211.33 210.00-214.00 3	105.60 45.00-143.00 5	317.20 107.00-430.00 5	5.31 2.35-6.50 5		24.00	
	Salted		30.00	110.00	3.40			
	Dried		80.00	133.50	5.90			
			60.01-100.00 2	80.00-187.00 2	4.59-7.20 2			
	Fermented						8.76	
	Whole							
	Cooked							
	Boiled							0.73

1/ Average of the means obtained from the literature cited.

2/ Range of the means found in literature cited.

3/ Number of mean values, which were reported in the literature cited

4/ Method of processing was not clearly described or the fish was identified only by common name.

Table 24.--Vitamin composition of mollusks and products.

Common and Scientific Name	Description	Vitamin A I. U.	Thiamine μg	Riboflavin μg	Niacin mg Per 100 grams	Ascorbic Acid mg	Folic Acid μg	Vitamin B ₁₂ μg
Abalone <u>Haliotis discus</u>	Muscle Raw						5.00	
Abalone <u>Haliotis gigantea</u>	Muscle Raw		240.00	60.00	1.60		5.00	0.73
	Canned		50.00	60.00	1.00			
	Seasoned		40.00	40.00	1.00			
	With liquid	30.00	10.00	40.00	0.20			
	Without liquid							
Abalone <u>Haliotis japonica</u>	Muscle Raw	10.00			1.50			
Abalone Haliotidae	Muscle Raw	5.00	193.33 ^{1/} 180.00-200.00 ^{2/} 33 ^{3/}	100.00 ^{1/} 60.00-140.00 ^{2/} 23 ^{3/}	1.53 ^{1/} 1.19-2.00 ^{2/} 33 ^{3/}	2.00		
	Canned		62.20 38.80-120.00 ⁴	73.33 40.00-120.00 ³	1.06 1.00-1.20 ³			
	Cooked		560.00	60.00	4.50			
	Unspecified ^{4/}		410.00	370.00	3.60			
	Dried							
Clam, Arkshell <u>Anadara broughtoni</u>	Muscle Raw						17.00	7.20
Clam, Arkshell <u>Anadara suborens</u>	Muscle Raw							20.00
Clam, Arkshell <u>Arca binakayanesis</u>	Muscle Raw						12.08	
Clam, Arkshell Arcididae	Muscle Raw	271.55 ^{1/} 100.00-635.00 ^{2/} 4 ⁴	65.35 2.00-200.00 ⁴	177.21 98.84-210.00 ⁴	2.63 1.51-3.88 ³	10.00		
	Canned							
	Seasoned	5.00	10.00	70.00	2.00	0.00		
Clam, Donax, Bean <u>Donax radians</u>	Whole Raw		2.00	120.00	2.33	1.87		
Clam, Donax Donacidae	Whole Raw	1317.00		120.00	2.30	2.00		
Clam, Fresh Water <u>Corbicula fluminea</u>	Whole Raw	511.00	1.00	161.00	1.15		1.15	
	Cooked		2.00	236.00	1.11			
Clam, Fresh Water <u>Corbicula leana</u>	Whole Raw			150.00				
Clam, Fresh Water, Corbshell <u>Corbicula japonica</u>	Whole Raw						17.00	12.10
Clam, Fresh Water Corbiculadidae	Whole Raw		40.00 20.00-40.00 ²	165.00 150.00-180.00 ²	1.20	9.50 ^{1/} 9.00-10.00 ^{2/} 2 ^{3/}	79.50 ^{1/} 77.53-81.47 ^{2/} 23 ^{3/}	
Clam, Green <u>Cyrena ventricosa</u>	Whole Raw	474.00	9.00 2.00-16.00 ²	78.00 74.00-82.00 ²	1.04 0.80-1.27 ²			

Table 24.--Vitamin composition of mollusks and products.

Common and Scientific Name	Description	Vitamin A I. U.	Thiamine μ g	Riboflavin μ g	Niacin mg Per 100 grams	Ascorbic Acid mg	Folic Acid μ g	Vitamin B ₁₂ μ g
Clam, Mactra <u>Mactra corallina</u>	Muscle Raw					17.00		
Clam, Mactra <u>Mactra veneriformis</u>	Muscle Raw		10.00					0.20
Clam, Mactra, Hen <u>Mactra sulcataria</u>	Muscle Raw	40.00	17.50 15.00-20.00 2	130.00	0.70	3.00		0.23
Clam, Mactra, Pacific Gaper <u>Tresus nuttalli</u>	Muscle Raw		128.00	98.00				0.25
Clam, Mactra Mactridae	Muscle Raw	66.50 33.00-100.00 2	35.00 20.00-50.00 2	140.00 130.00-150.00 2	1.10 0.70-1.50 2	4.00 3.00-5.00 2		
	Canned Seasoned	7.00	20.00	50.00				
Clam, Razor <u>Solen gouldi</u>	Whole Raw							8.60
Clam, Razor Solenidae	Whole Raw	17.00	90.00	490.00	1.50	7.70		
Clam, Softshell <u>Mya arenaria</u>	Whole Raw	300.00	10.92 0.80-79.00 8	135.55 95.00-243.00 9	1.75 1.13-2.53 7			85.51 ^{1/} 7.10-109.00 ^{2/} 8.37
	Canned			95.00				
	Cooked Heat processed		1.66 1.00-3.00 3	194.66 192.00-197.00 3	1.99 1.84-2.13 3			76.66 71.00-83.00 3
	Steamed							
	Vacuum-packed		1.00	213.00	1.13			68.00
	Unspecified		0.90 0.50-1.20 5	212.40 207.00-218.00 5	1.58 0.91-2.25 5			117.60 66.00-115.00 5
	Vacuum-packed		1.00	237.00	1.13			68.00
	Unspecified		1.20	212.00	0.98			69.00
Clam, Tellin Tellinidae	Whole Raw		10.00	20.00	2.20		10.90	
Clam, Venus <u>Dosinia japonica</u>	Whole Raw							4.50
Clam, Venus <u>Venus verrucosa</u>	Whole Raw					5.00		
Clam, Venus, Butter <u>Saxidomus giganteus</u>	Whole Raw		119.50 100.00-139.00 2	224.00 180.00-269.00 2	0.16			
Clam, Venus, Hard <u>Venus lusoria</u>	Whole Raw				1.68 1.36-2.00 2		11.00	2.34 0.20-7.00 12
Clam, Venus, Littleneck, Japanese <u>Tapes (Venerupis) decussata</u>	Whole Raw	150.00	23.50 9.00-60.00 6	275.50 150.00-547.00 6	0.98 0.60-2.00 6	7.00	58.00	12.27 1.50-20.00 8

Table 24.--Vitamin composition of mollusks and products.

Common and Scientific Name	Description	Vitamin A	Thiamine	Riboflavin	Niacin	Ascorbic Acid	Folic Acid	Vitamin B ₁₂
		I. U.	μg	μg	mg Per 100 grams	mg	μg	μg
	Canned Seasoned Unspecified	66.00 66.60	20.00 10.00	60.00 169.00 90.00-244.00 2	1.20 0.80		26.00	12.00
	Cooked Boiled		18.00	356.00	1.00		42.00	16.00
Clam, Venus, Littleneck, Pacific <u>Paphia staminea</u>	Whole Raw							31.00
	Meal							250.00
Clam, Venus, Northern Quahog, Cherrystone <u>Mercenaria mercenaria</u>	Whole Raw Canned		9.00	109.50 93.00-126.00 2	0.95		2.00	3.90
Clam, Venus, Ocean Quahog <u>Artica islandica</u>	Whole Raw					8.30		
Clam, Venus, Waved <u>Venus squamosa</u>	Whole Raw	420.00	75.00	174.00			17.81	
Clam, Venus Veneridae	Whole Raw	124.25 11.00-200.00 4	39.02 2.00-94.10 4	108.30 12.00-188.00 5	1.22 1.00-1.50 6	15.14 9.30-30.00 5	2.65	60.65 59.00-62.30 2
	Canned	7.00	20.00	50.00				
Clam Unspecified	Whole Raw	80.00 50.00-110.00 2	75.00 50.00-100.00 2	165.00 150.00-180.00 2	1.55 1.50-1.60 2	5.00		38.00
	Canned	47.41 30.00-82.40 3	25.90 11.80-46.00 3	87.47 60.00-105.90 4	0.89 0.11-1.20 6			
Cockle <u>Cardium tuberculatum</u>	Whole Raw					15.00		
Cockle, Pacific <u>Cardium corbis</u>	Whole Raw		69.00	156.00				
Cockle, Sand <u>Hemidonax donaciformus</u>	Whole Raw		1.00	151.50 150.00-153.00 2	6.19 6.18-6.20 2			
Cockle Cardiidae	Whole Dried		75.00 70.00-80.00 2	220.00 140.00-300.00 2	3.40 1.80-5.00 2	5.00	11.00	98.00
	Salted Smoked	283.00	20.00	270.00	3.00 0.60			
Cuttlefish <u>Sepia japonica</u>	Muscle Raw	6.70						
Cuttlefish <u>Sepia officinalis</u>	Muscle Raw			1.00		3.00		3.00
Cuttlefish <u>Sepia orientalis</u>	Muscle Raw		9.30	0.91	1.22	5.25		
Cuttlefish Sepiidae	Muscle Raw		132.95 40.00-211.80 4	50.00	1.35 0.71-2.90 6	0.00		

Table 24.--Vitamin composition of mollusks and products.

Common and Scientific Name	Description	Vitamin A I. U.	Thiamine μ g	Riboflavin μ g	Niacin mg Per 100 grams	Ascorbic Acid mg	Folic Acid μ g	Vitamin B ₁₂ μ g
	Canned Salted Seasoned	33.00	20.00	70.00	0.40			
	Cooked		50.00	220.00	1.80	0.00		
	Unspecified		7.06					
	Dried							
Mussel <u>Anodonta cygnea</u>	Whole							
	Raw					1.30		
Mussel <u>Dreissensia polymorpha</u>	Whole							
	Raw					1.08		
Mussel <u>Gebbia umbilicalis</u>	Whole							
	Canned							
	In Own Juices		10.00	230.00	0.24			
Mussel <u>Unio pictorum</u>	Whole							
	Raw					1.39		
Mussel, Blue <u>Mytilus edulis</u>	Whole							
	Raw		162.00	212.00 175.00-249.00 2				12.00
	Canned			127.00				
Mussel, European <u>Mytilus galloprovincialis</u>	Whole							
	Raw					6.00		
Mussel, Salt Water <u>Mytilus smaragdinus</u>	Whole							
	Raw	24.18					41.83	10.20
Mussel Mytilidae	Whole							
	Raw	156.50 33.00-280.00 2	20.00	150.00 120.00-180.00 2	1.60 1.20-2.00 2	7.50 6.00-9.00 2	41.80	10.20
Mussel Unspecified	Whole							
	Cooked							
	Boiled							
	Dried		30.00	680.00	1.96			37.00
Octopus <u>Octopus bimaculatus</u>	Muscle							
	Raw		27.00 25.00-29.00 2	41.50 40.00-43.00 2				
Octopus, Devil Fish <u>Octopus vulgaris</u>	Muscle							
	Raw	31.53	120.00	110.00	5.30	5.00		
	Dried		180.00	380.00				
Octopus Octopodidae	Muscle							
	Raw	10.00	50.00 20.00-140.00 4	96.66 70.00-120.00 3	2.14 1.30-3.00 4	0.00		
Octopus Unspecified	Muscle							
	Canned							
	In Olive Oil and Ink		20.00	380.00	20.00			
Oyster <u>Ostrea echinata</u>	Whole							
	Raw				1.20			
Oyster, Common <u>Ostrea edulis</u>	Whole							
	Raw					3.00		4.80

Table 24.--Vitamin composition of mollusks and products.

Common and Scientific Name	Description	Vitamin A I. U.	Thiamine μg	Riboflavin μg	Niacin mg Per 100 grams	Ascorbic Acid mg	Folic Acid μg	Vitamin B ₁₂ μg
	Cooked Steamed		300.00	150.00	1.00	8.00		
Oyster, Eastern <u>Ostrea virginica</u>	Whole Raw	300.00	147.40 9.00-240.00 27	190.94 16.00-340.00 18	1.96 1.92-2.00 2			18.00
	Canned		20.00	200.00				
Oyster, Giant Pacific <u>Ostrea gigas</u>	Whole Raw				2.22 1.13-3.30 2	22.30	9.60	16.00
	Canned					11.80		
Oyster, Native Pacific <u>Ostrea lurida</u>	Whole Raw					38.10		
Oyster, Portuguese <u>Ostrea angulata</u>	Whole Raw			125.00		0.13		
Oyster, Talaba <u>Ostrea malabonensis</u>	Whole Raw						9.56	20.90
Oyster Ostreidae	Muscle Raw	272.66 190.00-320.00 3	173.65 49.42-300.00 6	155.64 79.00-200.00 5	2.04 1.20-3.88 5	5.00	121.85 3.70-240.00 2	20.86 14.60-33.00 3
	Canned Boiled Unspecified	12.00 10.00	20.00 34.33 23.00-50.00 3	150.00 218.66 90.00-316.00 3	0.79 0.70-0.88 2		11.30	14.31
Penshell <u>Atrina kinoshitae</u>	Muscle Raw		300.00		1.50			
Scallop <u>Pecten caurinus</u>	Muscle Raw							24.00
Scallop, Common <u>Pecten yessoensis</u>	Muscle Raw Canned Seasoned Unspecified Dried	50.00	70.00 20.00 20.00 10.00	190.00 40.00 150.00 280.00	1.30 2.80 1.80 4.00	2.00		
Scallop, Coquille St. Jacques <u>Pecten maximus</u>	Muscle Cooked Unspecified					3.00		
Scallop Unspecified	Muscle Raw Canned Dried		40.00 20.00 75.00 20.00-130.00 2	88.33 65.00-100.00 3 55.00 40.00-70.00 2 275.00 150.00-400.00 2	1.40 5.20	3.00	0.51 1.20-1.36 2	1.28
Snail <u>Acmaea scutum patina</u>	Whole Raw Without Shell							19.00
Snail <u>Helix pomatia</u>	Whole Raw	60.00						

Table 24.--Vitamin A, B1, B2, B6, C, E, K, and P in mollusks and shellfish.

Common and Scientific Name	Description	Vitamin A I. U.	Thiamine mg	Riboflavin mg	Niacin mg Per 100 grams	Ascorbic mg	Vitamin C mg	Vitamin E mg
Snail <i>Pila luzonica</i>	Without Shell						11.75	12.80
Snail <i>Pleurophyllidia californica</i>	Without Shell							9.00
Snail <i>Terebralia sulcata</i>	Without Shell	427.00					11.00	12.58
Snail <i>Thais lima</i>	Without Shell							15.00
Snail, Pond <i>Ampullaria luzonica</i>	Without Shell		2.00	58.00	1.29			
Snail, River <i>Vivipara chinensis</i>	Without Shell							1.50
Snail Viviparidae	Without Shell	83.00	110.00	280.00	1.60	0.00		
Snail Unspecified	Without Shell					15.00		43.65 21.75-77.00 3
	Without Shell		30.00	100.00	2.20			
Squid <i>Loligo bleekeri</i>	Muscle Raw							1.60
Squid <i>Loligo ommastrephes</i>	Muscle Raw		30.00	80.00	3.20		12.50	1.30
	Canned Soaked & Drained	33.00	10.00	70.00	0.80			
	Cooked		10.00	30.00	1.70			
	Unspecified		130.00	170.00	6.80			
	Dried							
Squid <i>Rossia pacifica</i>	Muscle Raw							13.00
Squid <i>Sepioteuthis lessoniana</i>	Muscle Raw				2.60 2.00-3.20 2			
Squid <i>Watasemia scintillans</i>	Muscle Raw		150.00	200.00	4.00			
Squid, Common <i>Loligo vulgaris</i>	Muscle Raw		8.40	0.84	1.21	4.90		5.49
Squid, Japanese <i>Ommastrephes sloani pacificus</i>	Muscle Raw				2.15 2.00-2.30 2			
Squid, Long-finned <i>Loligo pealei</i>	Muscle Raw Dried		20.00	70.00	9.00		12.50	1.33
Squid Loliginidae	Whole Raw		68.00					
Squid Unspecified	Muscle Raw	5.00	25.16 9.00-43.30 8	91.59 8.00-146.70 8	2.24 1.40-4.08 8			

Table 24.--Vitamin composition of mollusks and products.

Common and Scientific Name	Description	Vitamin A I. U.	Thiamine μg	Riboflavin μg	Niacin mg Per 100 grams	Ascorbic Acid mg	Folic Acid μg	Vitamin B ₁₂ μg
	Canned In Olive Oil and Ink		60.00	470.00	1.70			
	Cooked Unspecified		57.00 14.00-100.00 2	88.50 27.00-150.00 2	6.86 1.71-12.00 2			
	Dried		68.40 23.00-60.00 5	308.40 80.00-420.00 5	5.92 4.60-9.03 5			8.40
Topshell <i>Trochidae</i>	Muscle Raw		60.00					
Turban <i>Cryptogramma squamosa</i>	Muscle Raw							25.67
Turban <i>Turbo cornutus</i>	Muscle Raw	233.00	60.00	60.00	2.54 1.60-3.00 4	2.00	7.30	1.05 0.30-1.80 2
	Canned Seasoned	33.00	20.00	40.00	4.00			
Whelk <i>Eburna japonica</i>	Muscle Raw		40.00	90.00	3.10			
Whelk, Common, Northern <i>Buccinum undatum</i>	Muscle Raw					3.60		
Whelk Unspecified	Muscle Dried		50.00	270.00	4.70			

1/ Average of the means obtained from the literature cited.

2/ Range of the means found in literature cited.

3/ Number of mean values, which were reported in the literature cited.

4/ Method of processing was not clearly described or the fish was identified only by common name.

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Scientific name	Common name	Pages
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<i>Abudefduf saxatilis</i>	Sargeant major	93
<i>Acanthias vulgaris</i>	Dogfish	257
<i>Acanthistius pictus</i>	Bass, sea, cherlo	40, 190, 246
<i>Acanthocybium solanderi</i>	Wahoo	115, 231
<i>Acanthogobius (Gobius) flavimanus</i>	Goby, yellowfin	63, 183
<i>Acanthopagrus berda</i>	Bream, mud	43, 191, 248, 337
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<i>Acanthopagrus schlegeli</i>	Bream, sea, black	248, 337
<i>Acanthurus bleekeri</i>	Surgeonfish	108, 227, 298, 369
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<i>Achatina marginata</i>	Snail	132, 241, 320
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<i>Acipenser fulvescens</i>	Sturgeon, lake	107, 296
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<i>Alepisaurus ferox</i>	Lancetfish, longnose	270
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<i>Alosa pseudoharengus</i>	Alewife	36, 136, 188, 244, 335
<i>Alosa sapidissima</i>	Shad, American	97, 158, 221, 288, 364
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